An Address
ON
SOME CLINICAL EXPERIENCES.

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GENTLEMEN,—As you have done me the honour to ask me to give an address to your society I propose to make some remarks on cases which have occurred in my practice; and I shall first call your attention to some conditions connected with the stomach requiring surgical interference. I cannot refrain from recalling to your recollection a very remarkable gastrotomy which I reported in full in THE LANCET of June 22nd, 1895. The case was that of a young woman, aged twenty years, from whose stomach I removed by gastrotomy a mass of hair weighing 5 lb. 3 oz. This was the third case recorded, the mass of hair removed exceeding in weight the other two, which respectively weighed the one 2 lb. and the other 10 oz. The curious fact about the condition of this patient antecedent to the operation was that during the time she was in hospital she exhibited no symptoms of stomach disorder and was able to eat and digest the ordinary hospital diet. The incision made in the stomach was 6 in. in length, which was afterwards closed with twenty-six Lembert's sutures of fine silk. I heard of her a short time ago. She went to America, married, and has a child. The operation of gastrotomy is not often called for. It is principally required for the removal of foreign bodies. It is very generally believed that most bodies which can pass into the stomach by the cardiac orifice will pass out again through the pylorus. Those which are retained are generally long bodies, such as knives, forks, &c. But it is hardly to be expected that the hoop of a barrel 15 in. long would pass out of the stomach. The only wonder is, like the fly in amber, how it got there. Such a case is reported by Fournier. Then, again, a number of small bodies may become agglutinated together and remain in the stomach. Mr. Mayo Robson removed from the stomach of a girl, aged twelve years, the following digestible items: 42 cast-iron garden nails, 1¼ in. long; 93 brass and tin tacks from ¼ to 1 in. long; 12 large nails, some brass-headed; 3 collar studs; 1 safety pin; and 1 sewing needle.

It is quite possible to reach foreign bodies impacted in the lower portion of the œsophagus through an opening made in the stomach as near the cardiac end and as high as possible. But the difficulties in removing them are greater than might be supposed and Mr. Jacobson records a case in which he failed to dislodge a toothplate even after he had opened the stomach sufficiently to introduce his whole hand. On the other hand, Professor Richardson[1] of Harvard University removed a tooth-plate, which had been impacted eleven months, from the œsophagus through the stomach. I have twice performed Loreta's operation for dilatation of the pylorus through a stomach incision. I regret to say they were both fatal. In the first case the pylorus was reduced to the size of a goose-quill and it was found with considerable difficulty. The little finger was at first forced through the constriction and it was then dilated up so as easily to admit the fore and middle fingers. The patient lived for five days and then died from the result of constant vomiting. At the post-mortem examination the stomach wound was found firmly united. In the second case the pylorus was not so constricted and was dilated up to four fingers. The patient died from collapse four hours after the operation. At the post-mortem examination the duodenum was found to be very thin and at its junction with the pylorus at the back the mucous and muscular coat was torn through so that blood and gas were extravasated into the subperitoneal tissue. She had also a very extraordinary hour-glass constriction of the stomach caused by the cicatrices of old ulceration. The constricted portion formed a tube 2 in. long and was at first supposed to be the œsophagus. Both these patients were in a very weak state and the fatal results were not surprising. This reference to Loreta's operation would not be complete unless I called your attention to another procedure which, although I have never had an opportunity, I should certainly have recourse to in any case of pyloric stenosis which required operation. I refer to the operation of pyloroplasty. Mr. Pearce Gould[2] has described this operation and I give you a condensation of his description. The abdomen being opened by a median incision an incision one inch long was made into the stomach close to the pylorus and in the long axis of the stomach. The little finger was then inserted and the pyloric orifice found contracted to the size of a crowquill. The incision was then prolonged into the duodenum until it measured rather over two inches. The opening was then widely stretched with blunt hooks and sewn up transversely. The mortality following this operation is said to be about 25 per cent., whilst that attending on Loreta's operation is at least 40 per cent. Non-malignant strictures of the lower end of the œsophagus may also be treated through a gastrotomy. Two such cases are recorded, in both of which the strictures were dilated with instruments, the results being most satisfactory.

I now pass on to another operation on the stomach—gastrostomy. Up to quite recently I have been in the habit of performing this operation by drawing up a portion of the stomach and attaching it to the parietes by a number of fine silk sutures, so that a portion of the stomach of about the size of a shilling is presented in the wound. Then subsequently, three or four days after, a very small opening was made with a sharp tenotomy knife and a catheter introduced for feeding purposes. In my own experience and in the results which I have seen in the practice of others I have not been impressed with the success of this procedure. When, therefore, a short time ago I was called upon to perform gastrostomy I adopted another method—that of Albert's. I have twice performed this operation and have seen it done twice by other surgeons and the results in all four cases have been so satisfactory that I shall not hesitate to adopt this method in the future. I will now describe the operation in detail. An incision about four inches long is made parallel with the left costal cartilages and about one inch to their inner side. The peritoneum is opened to the same extent. The stomach is then sought for and a central portion of the anterior wall seized and drawn out of the wound for some three or four inches; a stout silk is passed through the apex of the cone thus formed, including the peritoneal and muscular coats only. This silk is for holding purposes. The peritoneal coat of the stomach is then attached to the parietal peritoneum by a continuous suture of fine silk. There is some little difficulty at this step of the operation. The stomach is so contracted that the upper and lower borders approximate, and it is difficult to pass the needle without wounding the large plexus of vessels passing from the omentum on to the stomach above and below. When, however, the suturing is completed the peritoneal cavity is effectually closed. The next step in the operation is to raise a portion of skin from the outer edge of the wound for about two inches over the ribs. This can easily be done by separating the cellular tissue with the finger. At the upper end of this wound a counter opening is made. The silk attached to the stomach is passed up through this opening and the apex of the stomach-cone drawn a little way into the counter opening. It is then attached to the edge of the wound by four silk sutures. The parietal wound is closed with silkworm gut sutures. Before the patient leaves the table the stomach is opened, a catheter is introduced and four ounces of milk with some brandy are poured by a funnel and tube into the stomach. The first case in which I performed this operation was in a lady, aged seventy-three years. She was somewhat emaciated, but had only quite lately been unable to swallow a sufficient amount to sustain her and had been for about a week kept going by nutrient enemata. The operation was performed on Jan. 18th at a private home. She had no bad symptom and lived in great comfort until May 21st. She then died from extension of the disease to the trachea, which had been gradually encroached on. The second case was in a lady, aged sixty-six years. I operated on her also at a private home on March 18th. Unlike the first case, she was very sick for some hours after the operation, but on the second day feeding by the stomach was resumed. Since

[1] THE LANCET, Oct. 8th, 1887, p. 707.

[2] THE LANCET, May 20th, 1893, p. 1187.

then she has gone on quite well. I have seen this patient to-day; she is perfectly comfortable, has gained flesh, and is able to go out and walk about. She takes about two quarts of fluid nourishment with Benger, sago, &c. In both these cases we may feel satisfied that the operation has been most beneficial and has saved the patients from one of the most distressing terminations to life—death by slow starvation. This operation we have been considering is called for to alleviate those distressing conditions which ensue upon the obstruction of the entrance of food into the stomach. But there are other conditions equally painful which prevent the exit of the contents of the stomach through the pyloric orifice. I allude to malignant growths either in the pylorus itself or external to it but occluding the passage by pressure. I shall not speak of the excision of these growths by pylorectomy because I wish to limit my observations as much as possible to my own personal experience and I have never performed this operation. But there is another method of relief, much less severe than pylorectomy, which in well selected cases is calculated to prolong life and ease suffering. I allude to gastro-jejunostomy or lateral approximation between the wall of the stomach and the jejunum. The following is the description of this operation. A median incision not less that 3 in. long between the ensiform cartilage and the umbilicus is made and the peritoneum being opened the jejunum is sought for. It is rather difficult to find, and portions of small intestine have been attached to the stomach not far from the ileo-cæcal valve—a very fatal mistake to make. The pancreas and the transverse meso-colon are the two landmarks. The great omentum having been either turned up or pushed well over to the left side the hand is passed down to the spinal column and sliding over the pancreas it comes on the jejunum just below it. The characteristic of this jejunal commencement is that it is the only portion of the small intestine which is fixed. If, then, on drawing on the bit of bowel held by the fingers you find it fixed you may be sure that you have jejunum. A point a foot further on should be selected for approximation, so that there shall be no drag upon the loop. The question as to whether the anterior or posterior wall of the stomach should be selected is a moot point. The anterior wall is the more easy, but it involves a greater drag on the jejunum, which has to be carried over the transverse colon, and it does not afford so good an exit for the contents of the stomach. On the other hand, it has been asserted that the intestine is more likely to kink if attached to the posterior surface. Besides which the operation is more complex, as it involves the displacement of the stomach and the perforation of the gastro-colic omentum. In the two cases in which I have performed this operation I selected the posterior surface of the stomach and in neither case had I any reason to regret the selection.

The next point to be considered is the method of union, whether by stitching, by one of the various bobbins, or by Murphy's button. There is no doubt that, as far as rapidity goes, the latter method is the best, as I believe it to be in all cases of lateral approximation. I used the button in both cases and found it satisfactory. In one case the patient made a good recovery, passing the button on the eighteenth day. She was immediately relieved from all sickness and lived in comparative comfort for eight months. The second case was equally satisfactory as far as the immediate results went. But on the fifth day, as Rider Haggard says, "a curious thing happened." She was attacked by severe and constant stercoraceous vomiting and died in a few hours. At the post-mortem examination we found it was not a case of malignant disease of the pylorus at all, but an epithelioma of the hepatic flexure of the colon matting all the parts together and occluding the pyloric orifice by pressure. Perforation had taken place into the stomach—hence the stercoraceous vomiting.

We now leave the surgery of the stomach and pass on to consider some of those conditions of intestinal obstruction requiring operative measures. It is obvious that I cannot within the compass of this address range over the whole question, very interesting as it is to all of us, of intestinal obstruction. I propose, therefore, to select some typical cases for your consideration. The first case I refer to is particularly interesting to myself, for it was the first occasion in which I used Murphy's button. I have reason to think it was one of the first cases in which this method had been adapted in England. A boy, aged nine years, some eighteen months before had received a severe blow on the abdomen which set up a general peritonitis. He recovered, but soon after began to get recurrent attacks of obstruction accompanied by pain, distension, and sickness. These attacks at last became so frequent that I advised an abdominal section. He was removed to a private home. As I expected I found a portion of small intestine tightly constricted by the products of inflammation. I removed about 8 in. of bowel, uniting the cut edges with Murphy's button. The boy made a most satisfactory recovery, passing the button on the ninth day. From that time to this he has been perfectly well. Quite recently, on Dec. 31st, 1897, I operated on a man with a very similar condition arising from a different cause. Some months before he had been operated on in the country for a right inguinal hernia. As far as the operation went all was well, but three weeks after he began to develop symptoms of chronic obstruction. We came to the conclusion that in all probability the portion of bowel involved in the hernia had became matted together by bands and that this was the source of his symptoms. I opened his abdomen and found this to be the case. A long portion of bowel was removed and a Murphy's button was inserted, which was not passed for three weeks. The man made a good recovery and I have just heard from his medical man that he is in perfect health and working as a navvy. The anxious part about this case is that when the intestine removed was cut open a large granular growth was found on the mucous surface. There were also some enlarged glands in the mesentery. It looked very like a malignant growth and was afterwards pronounced by the pathologist to be an epithelioma. The after history of the case does not bear out that opinion.

A word as to the merits of Murphy's button. One is always inclined to speak well of the bridge that carries you over and certainly I have had sufficient success with this method to enable me to express a high opinion of its utility. I have never had a case in which the button has been retained except one. That was a case in which I attached a huge bile cyst to the duodenum by the button. It is now some four years ago; the button has never appeared, but the girl is none the worse for its retention. As I have before said, for lateral approximation I believe it is unequalled; but there is one difficulty attending its use in end-to-end union. Where you have a stricture of the bowel it must needs be that the portion of intestine above the stricture is largely distended, whilst that below is contracted. The result is that the dilated end of the bowel is with difficulty included in the button. I am inclined to think that Allingham's or Mayo Robson's decalcified bobbin are better adapted for this purpose, although as a rule it cannot be so rapidly applied, and saving of time in these cases is of paramount importance.

My next clinical experience is one of very great interest, partly from its rarity and also from its very successful termination. In October of last year I was asked to see a man in the country in conjunction with Mr. Lucy and Dr. T. E. Smyth of Tavistock. He was fifty years of age. For two years he had suffered from constipation. For two months he had had tenesmus with passage of blood and mucus. This became acute and for a week no fæcal matter was passed. On examination under chloroform the rectum was found to be ballooned and occupied by a rounded tumour, the posterior part was hard and nodulated, the anterior portion was soft and velvety, the lumen of the bowel being here detected. This tumour could be reduced by forcible injections, but immediately recurred. The diagnosis was intussusception of the sigmoid flexure into the rectum caused by the presence of a malignant growth. I performed the following operation. The patient was placed in the lithotomy position and the sphincter was widely dilated. The intussusception was then seized by two strong vulsella and drawn down through the anal aperture until about 6 in. protruded. The forefinger of the left hand was then passed up the bowel well beyond the growth, the thumb steadying the gut outside; care was taken to ascertain that no small intestine had slipped down between the layers of the gut. With a curved needle a fine silk ligature was passed parallel to the longitudinal axis of the gut through all the coats of the intussusception and fully one inch above the growth. When the point of the needle was felt on the forefinger it was turned outwards and brought out about a quarter of an inch below the point of entrance and the ligature tied. This process was repeated until the whole circumference had been ligatured with fifteen sutures. As the sutures were applied the bowel was gradually opened and

divided about half an inch below the ligatures. One of the great difficulties of the operation was the protrusion of the appendices epiploicæ, which were with difficulty replaced and retained during the tying of the sutures. In fact, after all the sutures had been placed it was needful to apply many superficial ones in order to cover in these protruding bodies. When the entire mass was removed an attempt was made to reduce the stump, but this could not be accomplished. However, the next day the bowels were opened spontaneously with the passage of large quantities of scybala, but no blood and without tenesmus. The rectum was examined and no trace of the intussusception could be discovered. From that time the patient made an uninterrupted recovery and is now in perfect health. The growth was reported to be columnar epithelioma. This is the seventh recorded case of intussusception caused by malignant growth operated on. Three were fatal.

Remarks
ON
THE TREATMENT OF FRACTURED BONES BY OPERATION.

Delivered at University College Hospital,

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GENTLEMEN,—The question as to the propriety of treating fractures by surgical operations by wiring is one which at the present time is engaging a good deal of attention. As yet the majority of surgeons appear to be agreed that for most ordinary fractures other and simpler mechanical modes of treatment are quite adequate and involve less risk, and with this view I entirely agree. There are, however, a considerable number of fractures which proverbially give but indifferent results if treated by mechanical appliances, and to these surgeons are beginning to apply operative treatment in ever increasing numbers. To this class belong fractures of the patella and of the olecranon, whether recent or old, and fractures of the long bones of the leg or arm in which union is long delayed or totally absent. Hitherto the great bugbear in the operative treatment of such fractures has been the risk to limb or life involved in the operation. The nature of these risks we all know and in the past they have very properly checked and limited operative undertakings. But how far this ought to be the case now with our greatly improved technique is a matter which appears to me to be open to discussion. With a view to clear my own impressions upon this subject I have for some time past been collecting those cases in which I have operated for fractured bones and studying the results in order to see whether the series appears to justify such interference or not. As these results will probably interest others who are speculating on the same subject I venture to publish them here. I have only to remark, in reference to them, that they include all the cases, without any exception that I am aware of, in which I have operated for injury of bones recent and old. If they have any value it lies in the fact that they form an unbroken series and have been operated on by the same surgeon, with almost identical precautions in each case against surgical accident. From the notes in the abstract which are now before me, but which are too voluminous for publication, I find that in all there are 46 cases, including some cases in which bones have been divided for various reasons and subsequently sutured, such as, for instance, where the patella or olecranon has been sawn across to explore a joint or reduce a dislocation but not including excisions. Of the latter it may be said that though their fate would materially and favourably influence the question of the justifiability of interfering extensively with bones they belong to a somewhat different category. I will only add that of all my excisions, for instance of the knee, amounting to some scores, I have lost none and only 2 have subsequently required amputation—the case of an old woman whose knee I tried to save and a young woman who came to me for amputation but whose leg I tried to save first by excision. The 46 cases alluded to arrange themselves thus: subcutaneous suture of patella for fracture, 19; suture of patella (open method), 10; suture of olecranon for fracture, 6; suture of olecranon for dislocation, 2; suture of bones of forearm (ununited fracture), 2; suture of bones of leg (ununited fracture), 4; suture of clavicle (ununited fracture), 1; suture of patella after division, 2; total, 46.

Of the first group it need only be said that all have recovered well from the operation without any accident. I have made every effort to follow these cases up to date and have seen the majority a long time after operation. The results have been excellent. In some few a little limitation of movement has remained, but the limb has been firm and as far as could be made out the union of the fragments was osseous. In none so far has the wire appeared to give any trouble. Of several I possess skiagrams. These show that though the union is bony the adjustment of the fragments to one another was not always symmetrical. This has not appeared to unfavourably influence the movements of the joints, as, indeed, could hardly be expected, as little irregularities in the patella in rheumatoid arthritis do not always do so we know. Several of the patients were absolutely restored to as good use of the injured limb as though it had not been damaged at any time. Those cases in which stiffness was noticed to any extent were past middle life and it was seen even in cases which had healed without reaction. On the whole I am very well satisfied with my subcutaneous method of suture for recent cases at any age. For fractures which have remained ununited, for months of course the open method will be required, but such cases will, I venture to think, become rarer and rarer as the simplicity and freedom from risk of the subcutaneous method is more fully recognised.

Of old fractures of the patella there are 10 cases and of these 8 healed by first intention without any suppuration. Cases 2 and 7 suppurated but not very seriously. The first was one of my earlier cases treated long ago and the suppuration was in the peri-articular structures. I saw the patient years later with an excellent moveable knee and removed the knot of wire which was giving him some trouble. Case 7 was one of comminuted fracture of the patella, almost compound, with loose fragments which had to be removed. Those which remained were surrounded with a "purse-string" suture and thus drawn together. Some swelling followed and effusion into the tissues above the knee, but though I made incisions only serum escaped. The main cavity of the joint appeared to be quiet all the time, though the suture wound opened and the wire had to be removed in part. I have put this down as one of suppuration as there certainly appeared to be some, and the wound yielded pus, though not to a large extent. I have lately seen the patient, who is well satisfied with the result. There is much stiffness in the knee, though I think this will pass off to a great extent in time. One of the last cases operated on was particularly interesting; it was one of transverse fracture by very slight muscular action. But the joint was enormously swollen and looked as if about to suppurate. I opened the joint by a curved incision with the convexity upwards—a method I have already published—and found a great deal of broken-down blood-clot, almost purulent, as one of my colleagues remarked. This was removed and the bone fragments brought together with one silver wire. The wound healed absolutely by first intention and the patient left the hospital. Before he went he was discovered to have ataxic symptoms. Two months later he was admitted to the medical wards as a case of Charcot's knee, the joint having become greatly distended. As there appeared to be pus in it it was opened by a colleague during my absence and much broken down purulent material was evacuated. It was then found that the wire had worked through the lower fragment and was loose. It was removed and the joint was drained. The man soon left the hospital healed but with all the signs of ataxy and has not since been seen. Had the condition which probably favoured the fracture been recognised at the outset I should not have operated. But the man was young and the symptoms were not well marked at first. In all the 8 cases where there was no trace of inflammation after the operation the results were admirable and in the other 2 the state of the patients or their joints did not appear to be critical at any time.

Six recent fractures of the olecranon were wired and with the exception of one which was compound

and comminuted the results as to movement were admirable. All healed *per primam*, even the compound case, but here there remained great stiffness. The woman was fifty-three years of age and when the adhesions were broken down under an anæsthetic about a month after discharge from hospital the line of union in the fragments gave way in spite of the "purse string" silk suture. In the other cases the results were almost or absolutely perfect. And I have recently seen a blacksmith's hammerman whose broken olecranon I wired two and a half years ago with as strong and moveable an arm as if it had never been broken. The method employed for some years has been to make an oval flap, drill the fragments transversely, and use wire, making the knob on the outside. In only one case so far has the wire given trouble. It irritated the skin and had to be removed. In 2 cases I divided the olecranon as a preliminary to reducing old dislocations of the elbow. In one, a boy aged twelve years, though firm union resulted there was considerable stiffness of the joint when he left hospital. He has not been seen since. In another, a woman aged fifty-six years, whose dislocation dated from four months back, I divided the olecranon, reduced the dislocation, and primary union resulted. When last heard of the result bade fair to be perfect. In 2 cases the radius was cut down upon and wired for old ununited fracture. The first I have not seen since the operation; the last, a middle-aged woman, recovered with primary union and with good use of her arm. The clavicle united perfectly under one dressing and all the symptoms were relieved.[1]

In 2 cases I divided the patella for access to the joint and wired at once. The union was primary in both without reaction and the patients left for the colonies, much relieved in 1 case; the other was a private case and was quite relieved.

Of the 4 cases in which the bones of the leg were wired for ununited fracture primary union took place in all and the functional result was perfect in 3. But in the first union had not taken place in the bones when last seen and the patient cannot be traced.

These results appear to me to be encouraging, especially as they were achieved in an old hospital now happily being rapidly rebuilt. With care and experience the result ought to be better in the future, but as far as they go they appear to justify the belief that such operations if done with extreme care do not involve such risk as to forbid them.

VACCINATION: WITH SPECIAL REFERENCE TO PROSPECTIVE LEGISLATION.[2]

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As the precise title of this paper has not been selected by myself, but is one on which I have been asked to open a discussion, I feel it necessary to give it a certain latitude of interpretation. By the term "prospective" I propose to understand not simply the legislation which is now imminent as the result of the consideration of the Vaccination Bill by Parliament, but such provisions as it has been found impossible to get incorporated into the Bill and as it is to be hoped may be placed on the statute-book at no very distant period, unless this country is to lag behind most others in the march of sanitary progress.

The vaccinist position. — It is superfluous in such an assembly as this to assume that we are all convinced that vaccination is in some degree a protection against small-pox. I have no doubt also that the great majority of us are thoroughly convinced that when properly performed it is free from serious risk and that it is nearly, if not quite, as effective a protection against small-pox as an attack of that disease itself is. I may probably go still further and may assume that there are few, if any, now present who would undertake to maintain that apart from the absolute separation of the infected person from all who are likely to take the disease—an almost impracticable condition—there are any other means of protection against small-pox which are approximately comparable with vaccination. It goes without saying that we all know very well, what is so generally ignored on one side of the controversy on this subject, that the term "vaccinated," unlike that of "unvaccinated," has no meaning which can for purposes of comparison be definitely estimated and that in using it for controversial purposes we labour under the disadvantages which inevitably attach to the employment of ambiguous terms.

The medical vaccinist as a critic.—It may be well also to refer at the outset to an objection which may be taken to the discussion by a purely professional meeting such as this of a question in the decision of which many of those present may be said to be personally interested. There are two answers to this objection, either of which is of itself sufficient. The first is that however much those who are engaged in the practice of vaccination may be assumed to be interested in the maintenance of it—and for my part I do not admit that the pecuniary interests of the medical profession as a body lie in this direction—this does not exclude them from the right—nay, does not absolve them from the duty—of discussing a matter which affects them in their individual capacity as citizens as much as it does other people. It may give a bias to their opinions, but that must be estimated by those who care to consider them. The second answer is that assuming, as is so often done, that medical men are prejudiced in favour of vaccination and therefore are not impartial judges of what is right and expedient in this matter, their opinions are entitled to the more respect if it should turn out that they are less enthusiastic in favour of the coercive promotion of vaccination than they are often assumed to be—less so, in fact, than many non-medical enthusiasts have shown themselves to be. In illustration of this view of the matter it may be pointed out that an unsuccessful proposal to absolve determined objectors to the compulsory vaccination of their children in infancy was made by a leading member of the medical profession on one side of the House of Commons in Grand Committee on the Vaccination Bill, whilst a more successful effort in the same direction at a later stage of childhood was made by an equally distinguished member of the profession on the Ministerial side of the House. This is a fair answer to the charge so often made by anti-vaccinationist controversialists that in maintaining compulsion Parliament is led by the nose by the medical men.

Legislation as it affects the individual and community.—The legislative aspect of the vaccination question is of two kinds: as it affects the individual and as regards the community of which he is a unit. So far as the ethical basis of legislation is concerned it must be assumed that whatever may be our views of individual rights in matters of *opinion*, there is only one principle upon which the maintenance of society can be based and that is that the right of the individual in regard to *action* must be subordinate to the opinion of the majority. But whilst strictly insisting on the imperative character of this principle as a general safeguard of society we must fully recognise the right of protest on the part of the individual to any legislation of which he does not approve and also that in all cases in which the volume of such protest becomes considerable the correlative question of the expediency of modifying the law against which it may be directed must engage the attention of prudent legislators. So far as the individual is concerned it must be frankly admitted that the aphorism, *de minimis non curat lex*, however unwise it may appear in conception and however harshly it may often operate in practice, is as unavoidable in vaccination as in all other matters of opinion which have to be embodied in a legal form. It is only when individuals can, from the force of their convictions or from the acuteness of their sufferings, succeed in associating their efforts so as to disturb the peace of the community or to impede the operation of the law that they can expect to obtain a hearing for their grievances, whether real or only sentimental. This may be considered as a somewhat cynical view of the matter, but it can hardly be disputed that it represents the real state of public opinion. It is obvious that this consideration applies in a still higher degree to the case of recalcitrant communities than it does to that of objecting individuals, since the difficulty of enforcing the law becomes proportionately greater as the number and solidarity of the protestants increases. Nor must we forget that in matters of opinion, as in pathology, infection often plays a very

[1] Vide Transactions of the Clinical Society of London.
[2] A paper read in the State Medicine Section at the recent meeting of the British Medical Association.

important part, and if not judiciously treated is apt to spread with unexpected rapidity and to become unmanageable. That we have approached within appreciable distance of this state of things in regard to vaccination in this country can hardly be denied by any one who has an adequate knowledge of the real state of affairs. The unfortunate interregnum in vaccination administration necessitated by the prolonged inquiry of the Vaccination Commission has led to a crisis which can only be described as a state of administrative chaos.

How does the Vaccination Bill meet the crisis?—Looked at from this point of view there are two questions which, both as citizens and as medical men, we are called on to discuss. The first is, how far does the Vaccination Bill meet the agitation against the Vaccination Acts which has been steadily increasing in volume since those Acts, and especially that of 1867, were passed? The second is, assuming, as the Royal Commissioners unanimously recommended, that vaccination is to be promoted by the State, so far, at any rate, as the maintenance of the existing machinery is concerned, what provisions are necessary in order to carry out that object effectively?

The agitation against vaccination.—That the agitation against vaccination which commenced about thirty years ago has been since then steadily growing is a fact much less generally appreciated than it should be. The refusal by boards of guardians to enforce the compulsory sections of the Act of 1867, which was for some years unheard of, has during the last decade become a familiar occurrence. This may no doubt in some degree be attributed to the excuse which the protracted inquiry by the Royal Commission has offered to many boards who, though perhaps prepared to carry out the law as it may be modified by Parliament as the result of this inquiry, have been glad to avail themselves of this pretext for at least suspending action. Indeed, had it not been for the experience of Gloucester, followed so soon after by that of Middlesbrough, it is probable that the general dereliction of prosecutions would have been much more extensive than it has been. What has been the cause of this apparent unwillingness of vaccination authorities to carry out the law? It certainly is not attributable to any decline of confidence on the part of the medical profession in the efficacy of vaccination as a protection against small-pox when rightly and duly employed. If there were any question on this point it would be settled by the recent declaration of over 1100 medical officers of health that in their opinion vaccination is the only trustworthy protection against small-pox, both for the individual and the community. Every epidemic—nay, every isolated outbreak of small-pox—only adds fresh evidence to the huge mass which the experience of a century has accumulated. So huge, indeed, is it that only those who, like the Royal Commissioners, have had to wade through it, even with the assistance which their report affords, can form any idea of the weariness of the effort required. There is, of course, as we all know, a sufficient explanation of the enfeeblement of the law which has been thus steadily taking place.

Its causes.—It is to be found in three causes. The first of these is the natural intolerance of the ordinary Briton for compulsion in any shape, and especially for compulsion in matters which intrude within the domain of private opinion, of the relations of the family, or of the sacredness of the person. It is needless to discuss the reasonableness or the reverse of this feeling; we must accept it is as a fact. The second cause is the unquestionable occurrence of mischief which, whether rightly or wrongly attributable to vaccination, has certainly followed it. The third is the recognition of results connected with the spread of small-pox which appear at first sight, and when incorrectly represented, to be incompatible with the claims made for the protective value of vaccination. It is quite unnecessary to assume that the efforts which have been persistently made to appeal to the intolerance of control, which we all feel, and to parental sentiments, which are worthy of the highest respect, by an exaggeration or misrepresentation of the seriousness of this mischief have been actuated or even materially maintained by disingenuous motives. Bare justice demands the recognition of the fact that the great majority of those who have taken an active part in the agitation against vaccination have had more to lose than to gain in so doing, so far as their pecuniary interests are concerned. That paid advocacy has played a part in this, as it does in all prolonged agitations for the spread of new opinions, may be admitted without thereby reflecting on the good faith of those who have availed themselves of it. Paid advocacy may suggest caution in receiving the statements of the advocate, but it is in no way incompatible with their being true. We must look in a different direction for an explanation of the enthusiasm by which what we cannot but regard as the wrong-headedness of the anti-vaccination movement has been so persistently maintained. It is to be found in the tendency, largely unconscious, which we all have in matters of opinion to exaggerate everything which appears to support what we ourselves believe, to give undue weight to sentiment as opposed to reason, and to view in a false perspective the relative features of our mental landscape. It is only necessary to give the names of some of the men who have identified themselves with the anti-vaccination movement to appreciate the fact that this tendency is not confined to the illiterate or even to those who are destitute of scientific culture. The name of at least one of the protagonists of the anti-vaccination cause might be quoted to prove that it is consistent with the highest degree of mental training and originality.

The crude Bill.—How does the Vaccination Bill propose to meet this state of things? As is well known the Bill first laid before the House of Commons contained only three provisions which are material to this question. It proposed to limit prosecutions to two, or perhaps three, at the most; to compel the use of glycerinated calf lymph by public vaccinators, unless the parent or other person with whom the discretion lies prefers some other form of lymph; and to offer, and in many cases to personally present, this lymph at the home of the defaulter. It must be evident to anyone who has any acquaintance with the conditions which led to, and have so long maintained, the anti-vaccination agitation that those who are responsible for the Bill must either be singularly unacquainted with the history of this agitation or excessively sanguine as to the power of glycerinated calf lymph in dissolving it if they thought that the Bill in this form would put an end to it.

"Glymph" as a solvent of doubts.—One would almost fancy, from some statements which have been made on the subject, that we had never heard of glycerinated calf lymph, or "glymph," as it has been proposed for brevity to call it, until it was revealed to us by the Bill; whereas, as we all know, it has been in use by private vaccinators for years past. The best indication of its value as a solvent of anti-vaccinist doubts is that in Germany, where the combination of glycerine with human lymph was introduced more than twenty years ago, there is an increasingly active agitation against vaccination. And it is somewhat singular, as an illustration of the different points of view from which what may be called the controversial value of glycerinated calf lymph is regarded, that whilst in this country it has been thought sufficient to make it practically the *pièce de résistance* of our new vaccination law the official German handbook on the subject of vaccination, which deals mainly with its controversial aspects, makes absolutely no reference to it at all. The Germans have adopted this agent, as a valuable laboratory device, which enables calf lymph to be employed under the most favourable conditions at present practicable, but they do not seem to think it necessary, or perhaps even expedient, to depend on this provision alone as a means of relieving vaccination from all ground of reproach, nor to pin themselves by an Act of Parliament to the compulsory use of any single preparation, as the Bill in its original form would have tied down the Local Government Board. The German Government place their reliance in minimising the opposition to vaccination, not on glycerinated calf lymph alone, but upon a carefully devised administration by which the process of vaccination in all its stages is hedged round by precautions which we entirely ignore, as a sample of which it may be mentioned that any medical man who can be shown to have performed vaccination in such a way as to expose the subject of it to needless risk is liable to a very severe penalty. The real value of glycerinated calf lymph, of course, is—and I have no desire in any degree to minimise it—that it reduces to an incalculable zero the previously "insignificant"[1] pretext which there was for magnifying the dangers of vaccination. But reasonable people who are satisfied with the opinion of the Royal Commissioners on this point will hardly need the further assurance which the purveyor of official calf lymph will now be authorised to give, whilst it is to be feared that the unreasonable people by whom the anti-vaccination agitation is entirely carried on will be in no degree conciliated by it. Upon the great majority of defaulters, the

[1] See opinion of the Royal Commissioners in final Report.

indifferent and the indolent, it will have no appreciable effect; they will not be induced to have their children vaccinated because they believe that calf lymph is any better with glycerine than it is without it, but because they know that behind the public vaccinator, with his lancet and his glycerinated calf lymph, stands the vaccination officer with a summons. The whole influence of the first of these two officials in diminishing the number of defaulters will depend on whether the sequence of the second of them can be certainly reckoned on or not. On this point still hangs, as it has hung for many years past, the vaccination problem. The mistake of specifying "glycerinated calf lymph" in the Bill has been corrected in Committee by the addition of the words "or such other lymph as may be issued by the Local Government Board." But it may well be asked why, with this alteration, the words "glycerinated calf lymph" should be retained in the Bill at all? The public must trust the Local Government Board in this matter, and the simpler provisions of this kind are made the better, in view of the handle which a superfluous word often affords to an astute lawyer for verbal strife. Surely the words "lymph as issued by the Local Government Board" would be sufficient for the purpose.

Need for the diffusion of knowledge.—But apart from the bigoted antivaccinist on one side, whom nothing will convince, and the indolent and indifferent parent on the other, who can only be compelled to face his responsibility by the strong arm of the law, lie the great body of the British nation, who know but little about vaccination, and for the most part, also, have at the outset no prejudices either for or against it, except so far as it may be likely to entail inconvenience or discomfort upon them. They are the ready prey of the casuistry and misrepresentation which the organised machinery of the Anti-vaccination League brings to bear upon them, and they will continue to be so in default of a corresponding effort to counteract this mischief. It is a striking paradox that whilst we have for 30 years been compelling parents to have their children vaccinated we have never thought it expedient to make any official or organised effort to explain to them the grounds on which this requirement is founded. And it is a fact which is scarcely credible that if a local vaccination or sanitary authority were to incur any expenditure in diffusing literature on this subject or in any other way promoting the spread of knowledge in regard to it—except, possibly, when small-pox might be actually prevalent in the neighbourhood—those members of it who might happen to sign the cheque for so doing would render themselves liable to be surcharged by the auditor and could only obtain relief by memorialising the Local Government Board.

The amended Bill.—The Bill, when it emerged from the ordeal of consideration by Grand Committee, was distinctly improved by the process. The provision which extended the age limit within which vaccination is required from three to twelve months was altered to six months. This alteration was made chiefly on the strength of recommendations to that effect by the Council of the British Medical Association, the Society of Medical Officers of Health, and other representative bodies, and though open to some discussion is probably on the whole, a judicious alteration. The clause providing that the public vaccinator shall visit the home of the child for the purpose of vaccinating it, if requested to do so by the parent, was the most valuable one in the original Bill, as it will remove a fertile source of discontent on the part of mothers who dislike, and with some reason, taking their children to public stations. The objection to this proposal on the ground that the home of the child may for sanitary reasons be an unfit place for performing the operation was met in Committee by an amendment giving the vaccinator a discretion to withhold vaccination for this reason if he saw good to do so. As a parent is under no compulsion to invite the public vaccinator to vaccinate his child no reasonable opposition could be offered to this clause. Others which are in the same category and which were mostly added as amendments in Committee, were Clause 2, which prohibits the repeated prosecutions which have been so largely responsible for the agitation against vaccination; Clause 4, which provides that persons committed to prison for vaccination offences shall be treated as first-class misdemeanants; Clause 6, enabling the Local Government Board to make special provision for opening public vaccination stations in case of any local outbreak of small-pox; Clause 7, authorising local authorities to incur reasonable expense in distributing literature explanatory of the advantages of vaccination; and Clause 8, requiring records of cases admitted into small-pox hospitals to be kept, and making them accessible to those who may wish to consult them.

Domiciliary visitation.—The Vaccination Bill in its original form contained three other provisions besides the prescription of the use of glycerinated calf lymph. One of these, to which reference has already been made, requires the public vaccinator to vaccinate children at the homes of their parents, if called on to do so. This course, which was recommended by the Royal Commissioners, is an eminently reasonable one, and simply involves the consideration of the cost of paying for such visits. Sir Walter Foster attempted to get a schedule of vaccination fees incorporated with the Bill, but for some not very evident reason it was not accepted. A more questionable provision is that which requires the public vaccinator to offer vaccination at the home of the parent in the case of every defaulter. This arrangement, which seems very simple in theory and which was justified by a somewhat misleading analogy drawn from Scotch experience, will probably prove to involve considerable difficulties in practice. It is certainly open to two grave objections. The first is that in urban localities where the feeling against vaccination is strong it will expose the public vaccinator to treatment which is likely to make the office a very thankless one. There can be no expectation that he will convert the objecting parent, and as these visits will have to be paid for, it is only imposing useless expense on the community to require them. If it be urged that they will help to make the case stronger against the recalcitrant when he may have to be summoned before the justices, the obvious answer is that it can be made quite strong enough by giving him the offer of vaccination in another way. This may be done by requiring the vaccination officer to serve the parent with notice at the appointed time that the public vaccinator will attend at the home of the child to vaccinate such child unless he shall have received before a specified date a notice signed by the parent that he does not wish him to come. This would give the parent the opportunity of having his child vaccinated by his own medical attendant if he preferred doing so; if he did not take this course but sent a note deprecating further attention, it would save a useless visit by the public vaccinator and would serve as *primâ-facie* evidence of his irreconcilable objection. If the public vaccinator received no such notice he would be justified in going to the home of the child, and if vaccination were then refused, the refusal under such circumstances would be a fact which the justices would probably take into consideration when inflicting a penalty.

The private vaccinator ignored.—The second objection is that it may very easily create friction between the public vaccinator and his professional brethren, into the houses of whose patients he will thus be licensed to intrude. This consideration naturally leads to another, and that is that the Bill entirely ignores the fact that so large a portion of the vaccination of the country is performed by private vaccinators. The public vaccinators have complained, and with reason, that they are heavily handicapped in being required to make four insertions as a condition of being paid for their work as efficient, whilst private vaccinators are allowed to underbid them by giving certificates of what is assumed to be satisfactory vaccination on the strength of a single insertion. On the other hand, the private vaccinators have a right to complain that the Bill handicaps them by containing no provision for their being supplied with lymph bearing the Government guarantee as the public vaccinators will be. Hence, instead of a healthy rivalry being established between these two sections of the profession by which both should be encouraged to do their work with the highest degree of efficiency, an antagonism is created between them which can hardly fail to be detrimental to vaccination and consequently to the public interest. The expediency of recognising the work of private vaccinators, and of putting them on the same footing with public vaccinators, which was recommended by the Royal Commission and was pressed on the Government from a variety of representative bodies, was embodied in an amendment proposed by Sir Walter Foster and supported by Sir William Priestley and Sir Charles Cameron, but was defeated. It was opposed by Mr. Chaplin (who admitted that it would promote vaccination) for two reasons: because it would entail a heavy burden on the rates and because there was no assurance that satisfactory results could be obtained without the appointment of a

"whole army of inspectors." These objections seem capable of easy answer. The children who would be thus vaccinated would be mainly of the class who now are vaccinated at the charge of the ratepayers. All that would be done therefore would be to transfer to private vaccinators a portion of the fees now paid to the public officials. The burden on the rates would not be appreciably increased by so doing, except upon the assumption that those who are now competent to pay for vaccination would under the new regulations claim to have it done free. But this might be safely left then, as it is now, to the medical men themselves, who were prohibited by Sir Walter Foster's proposal from making any private charge if they took the administrative fee and who would scarcely accept 1*s.* 6*d.* from the rates if they could obtain more from the parent direct. As to the need for "an army of inspectors," this objection is equally susceptible of answer. The inspection of public vaccinators as now carried on by the Local Government Board can hardly be claimed to be a very effective one. A hasty inspection made once in two years, which is the amount of supervision bestowed on the bulk of public vaccinators, scarcely represents an adequate control, and it may be freely admitted that if arm-to-arm vaccination were to be maintained, any extension of this system of control to private vaccinators would be quite impracticable, except at the cost which Mr. Chaplin suggested. But he appears to have overlooked the fact that the change to glycerinated calf lymph will entirely alter the aspect of this question and that with a properly-devised form of certificate and a stiff penalty for misstatements, as proposed by Sir Walter Foster, those vaccinations by private vaccinators for which the public would be called to pay would be mainly a matter of inspection of registers, which might be well delegated to local officials.

Local option.—There is one aspect of the vaccination problem which the Bill will leave unchanged. It is this: there are unquestionably a large number of boards of guardians who at the present time are not enforcing the vaccination law. Admitting that a certain proportion of those authorities who have suspended action on the plea that they were waiting to see first what the report of the Royal Commission would be and then what Parliament would do will, when the Vaccination Bill has become law, resume the prosecution of defaulters, there will be a considerable number who are not likely to do so. In some cases these boards have ceased to take any action at all and the subject of vaccination is practically ignored by them. Others profess to consider the objections of defaulters and to deal with them on their merits. The result in this case also is much the same as in the other, for in one way or another every one who chooses to express an objection to vaccination is allowed to escape scot free. The position taken by these boards really amounts to a claim to exercise local option in a matter in regard to which Parliament has conferred no such right. The claim is founded on the assumption that boards of guardians possess a discretionary power in this matter which the law has certainly not given them. That this is the strictly legal view of the question is beyond doubt. And it is important to recognise also that this claim is only a phase of a much larger one by which some of these boards seek to emancipate themselves in all matters from any form of central control. Local option therefore in vaccination is the first serious manifestation of a revolt by local authorities, at first as boards of guardians, against the general opinion of the country as formally expressed by Parliament. As such it must be dealt with firmly, unless we wish to drift into general anarchy. Even if it cannot be checked it can be at least controlled. How is this to be done.

How to control local option.—The President of the Local Government Board has drawn attention to a fact which has escaped general observation—that Parliament has already provided in the Vaccination Act of 1874 a remedy for this state of things by investing the Board with powers in virtue of which they can directly instruct vaccination officers to carry out their duties in regard to the prosecution of defaulters where the boards of guardians, whose officers they are, refuse or neglect to take action of this kind. It is probable that many boards which had suspended prosecutions would be glad to be relieved of the disagreeable position in which they find themselves in this matter by having the responsibility of action thus taken off their shoulders by the central authority. But it is difficult to see how this can be done without a transference at the same time of all other duties in regard to vaccination from the defaulting board to some other body. The local administration of vaccination, if it is to be carried on with any energy or efficiency, must be vested in some body which is interested in so doing. Even where boards of guardians do not expressly refuse or neglect to carry out the law, they generally show little enthusiasm in regard to vaccination. And the reason is not far to seek. Vaccination is distinctly a branch of preventive sanitary action with which guardians, as such, have nothing to do. Their work is the administration of the Poor-law, and in looking after this they have quite enough to find occupation for all their energies. If, therefore, they are to be relieved of the duty of prosecuting vaccination defaulters they will not unreasonably expect to be relieved also of all other duties connected with vaccination. And it is very much in the interest of vaccination itself that they should be.

The divorce of vaccination from other sanitary work.—The fact is, and it is necessary distinctly to recognise it, that the whole of the difficulty connected with the vaccination question has largely grown out of the maintenance of boards of guardians as the vaccination authority after the creation by the Public Health Act of 1872 of sanitary authorities. Had vaccination then been placed, along with other sanitary work, in the hands of these latter bodies not only would there have been a better guarantee of its being carried out more efficiently than it has been, but there would have been much less opportunity for friction in so doing. And the reason for this is very obvious: it would in that case have become part of the work of the medical officer of health to look after it. He is officially interested in the promotion of vaccination because he is interested in the control of small-pox. It is a curious instance of the utterly illogical and fragmentary character of so much of our legislation that this divorce of vaccination from other branches of sanitary administration should ever have been perpetrated by which the medical officer of health is excluded from any connexion with one of the most important branches of preventive work. It is still more strange that although the blunder should have become increasingly evident during the quarter of a century which has elapsed since it was first made there should have been no effort to remedy it. But what is most singular of all is that at the present time, when the need for fresh legislation has been recognised by the Government to meet the official position in which vaccination has got, and notwithstanding the strong representations which have been made to them of the desirability of transferring vaccination from boards of guardians to sanitary authorities, they have not adopted this course. This would at first sight appear to be the more extraordinary because the proposal can scarcely be considered one of a contentious character, though it is only fair to admit that it would involve a good deal of legislative detail in the shape of amendment of existing Acts which, with the facilities at present available for obstructive tactics, might have been made an excuse for even greater delay than the Vaccination Bill has already experienced. It must also be admitted that so far as the majority of rural sanitary districts are concerned the variation of personality between the board of guardians and the sanitary authority is so trifling as to be unimportant. Still, with full allowance for these considerations it may be safely maintained that the Government would have been well advised to make the venture if only in the form of a provision giving the Local Government Board power to make such a transference in any case in which a board of guardians neglected or refused to carry out its duties under the Vaccination Acts. There are probably not many rural districts in which such a contingency would arise. It is in Poor-law districts which include urban populations that the transfer is most likely to be needed, and in many of these it would be as much welcomed as a relief by the board of guardians as it would be accepted without difficulty by the sanitary authority.

How to treat recalcitrant authorities.—There are no doubt towns where this would not be the case, in which the reluctance to enforce vaccination, so far as such enforcement will in future be possible, would be as great on the part of the sanitary authority as it has been on that of the board of guardians. How are such cases to be dealt with? Take Leicester, for example. The sanitary authority of Leicester professes apparently to believe that it can deal with epidemics of small-pox by means of isolation, without having recourse to vaccination. Those

who are familiar with the facts of the outbreaks of small-pox which have taken place at Leicester of late years know very well that whatever may be the theory of Leicester on this point it does not represent the practice in that town. For in Leicester, as elsewhere, when small-pox is prevalent there is always a run upon vaccination, and the medical officer of health, who has never had any delusions of this kind, has always had a free hand to vaccinate all whom he could induce to undergo the operation, including those who were most exposed to infection, such as hospital nurses and attendants. But if the sanitary authority of Leicester or any other place were to refuse to promote vaccination with the very moderate amount of coercion which will in future be associated with it, why should they not at least be required to show that they have provided in an adequate degree the resources which they claim to be an effective substitute for vaccination? They, in common with other opponents of vaccination, allege that isolation and disinfection are sufficient weapons with which to meet an outbreak of small-pox. Well, we have had some experience both at Gloucester and at Middlesbrough of what is needed to meet possible contingencies of this kind. Why should not the Local Government Board lay down a general proposition as to the minimum amount of resources for hospital accommodation and disinfection which such a town as Leicester should provide, and then hold an inquiry as to how far it had met these requirements? If the Leicester sanitary authority could show that they had efficiently armed themselves in this way they would have some claim to be entitled to disregard vaccination, but if Leicester or any other place where vaccination is formally discountenanced were to refuse or to neglect to comply with reasonable requirements in regard to providing the alternative for vaccination which the anti-vaccinists themselves affect to consider a sufficient protection the force of public opinion would be so strong against them that the Local Government Board would be well justified in bringing all the powers of the law, whether by *mandamus* or otherwise, to bear upon them to compel them at least to make such provision. It is only by compelling defaulting sanitary authorities to spend money in doing their duty that they can be brought to book. Such procedure is on all fours with that by which individuals who refuse to do their duty are punished. They are fined, but with this difference, that in their case the penalty is applied for the benefit of the community at large, instead of being primarily devoted to meeting their own needs, as it would be where a sanitary authority was compelled to spend money in providing for its special requirements. Hedged round with these conditions there would be something to be said for allowing the principle of local option in vaccination to have some scope for experimental application. At any rate, it would be placed under some control, which would be better than the present state of anarchy.

The vexed question of compulsion.—The Bill as it entered Committee was so drafted, as has been already seen, as to remove a good deal of the grievance by which the agitation against vaccination has been largely maintained. Prosecutions, which have been hitherto unlimited and in some cases scandalously multiplied, would be in future limited to two or possibly three. This of itself was a great gain. But the framers of the Bill failed to avail themselves of the opportunity which presented itself to them to use the power of prosecuting defaulters in a much more effective way than has been hitherto done. The 31st Section of the Act of 1867 gives power to prosecute the parent or custodian of any unvaccinated child until the child is fourteen years of age. The Jenner Society have urged in various documents which they have issued on the subject that if the power of prosecuting defaulters thus conferred by the Act of 1867 is to be retained as a test of the solidity of objection on the part of a defaulting parent, it is not expedient to use it more than once in infancy and that a second or third application of it, if employed at all, should be applied at later periods of the child's life, when first entering and when about to leave school. The object of so doing is, in the first place, to formally revive at these periods the requirements by the State of the vaccination of the child, in the second, to put the same pressure upon the parent at these two stages of the child's life as was applied in infancy. Such a procedure is thoroughly logical and defensible. For if the penalty test is defensible in infancy it is equally so at these two later periods, when the danger against which vaccination is a safeguard is greater both to the child and to the community than it is in infancy. Sir Walter Foster took the sense of the Committee on the penalty question generally by proposing what is commonly called a conscience clause, which, after all, when enforced in the way he proposes is only a penalty in modified form. For it cannot be denied that anything short of the power of escaping vaccination by signing a simple form of declaration, which can be made without any trouble or expense, is a penalty, especially to a poor man. On the other hand, any form of exemption which does not go beyond such a declaration is so feeble a test of the solidity of a man's objection that it is practically no test at all. The Committee decided, though by a small majority, that it was not expedient to abandon the test which the law at present imposes limited in the way proposed in the Bill. Sir William Priestley then proposed and carried an amendment which adopts the course suggested by the Jenner Society of limiting the prosecutions in infancy to one, under the 29th Section of the Act of 1867, and reserving the use of the 31st Section until the child arrives at the age of four. To this Sir William Priestley himself added the provision that if a parent "satisfies the court that he conscientiously believes vaccination would be prejudicial to the health of the said child," he is not liable to any further penalty or molestation. Nothing is said in this provision about costs, and as prosecutions cannot be initiated without incurring costs of some kind it is doubtful who is to be left to pay them in case of successful evasion of the requirements of the law. Now, it cannot be denied that this clause is open to all the objections on the score of logic and consistency which have been urged against the adoption of exemption by declaration in infancy. It is true that it revives the obligation of the law once, but it does so in a very attenuated form. It prescribes a penalty as the price of exemption, but what that penalty is precisely to be is left somewhat obscure. It is, in fact, one of those compromises which are so often the price which has to be paid to buy off opposition.

Further amendments: rejection of Clause 7.—The foregoing notes on the Vaccination Bill were written before the recent debate on the report stage of the Bill. Only two material amendments have been made in it at that stage, but they are of some importance. The first was to strike out Clause 7, which was done by a majority of 270 to 49. The history of this clause is so curious and it throws such an interesting light on what may be called the internal economy of the Bill as to justify a little explanation of it. It was originally suggested by the committee of the Jenner Society, with other amendments, in a memorandum on the Bill which they issued. Sir William Priestley proposed it on behalf of Sir Walter Foster, by whom it was originally placed on the Orders of the Grand Committee. Mr. Chaplin accepted it without any demur and the Committee adopted it without any opposition. Its object was to enable local authorities to incur reasonable expenditure in diffusing information on the subject of small-pox and on the advantages of vaccination in preventing it. At the present time it is open to some doubt whether boards of guardians can incur such expenditure. By a liberal interpretation of a clause in the principal Vaccination Act it might be assumed that they could do so, but the point is not so clear as it might be, and it is quite certain that sanitary authorities, who are much more interested in preventing small-pox than boards of guardians are, have no such power. It appeared desirable that the doubts affecting the power of boards of guardians should be cleared up and that sanitary authorities should be distinctly empowered to diffuse information on a matter in which they are so greatly interested. On report of the clause Sir Charles Dilke moved its rejection on the plea that it might lead to friction between county councils and boards of guardians. How it could possibly do so he did not explain, and as there are numerous chairmen and other members of county councils in the House, none of whom supported this view of the matter, the fear may be dismissed as groundless. Sir Walter Foster, who had originally fathered the clause, strangely enough had nothing to say on its behalf and consented to its withdrawal. Mr. Gibson Bowles ingenuously objected to it because it would favour a "one-sided propaganda," and he appeared to be ignorant of the fact that the agitation against vaccination is maintained by a propaganda of a decidedly one-sided character. Mr. Chaplin repudiated responsibility for the clause but recognised its utility, and several members, chiefly on the Government side, protested against its rejection. Under these circumstances it might have been expected that it would easily pass, but to the general surprise Mr. Balfour pronounced against it and it

was lost. Mr. Balfour's explanation of his objection to the clause was even more remarkable than that of Sir Charles Dilke. He said that for a consideration he would undertake to produce a defence of vaccination which would inspire doubts in anyone who read it, and that it was not desirable to give boards of guardians a chance of making vaccination ridiculous. That Mr. Balfour, who is an admitted master of the art of clothing philosophic doubt in the garb of conscientious conviction, could travesty a defence of vaccination which would breed doubts in the mind of an unprejudiced reader is quite possible. But whether he would equally bamboozle the auditor of the Local Government Board, who would ultimately have to decide as to whether his defence was a travesty or not, is a different matter. Moreover, if so little confidence can be placed in boards of guardians that they cannot be trusted even to circulate literature in support of vaccination, how can Mr. Balfour justify their retention as vaccination authorities? A lamer excuse for a foregone conclusion was never offered. The real explanation of the sudden change of front in regard to this clause is very simple. The anti-vaccinationists outside the House had discovered, under the inspiration of the *Vaccination Inquirer*, the organ of the Anti-vaccination League, that a mistake had been made in not opposing the clause in Committee. Pressure was at once brought to bear on such members as could be influenced to reject the clause. All the non-official members who opposed it represent constituences in which the anti-vaccinationists are strong. It was a small sacrifice for them to burke the clause. But they could not have rejected it without the connivance of the Government. This was not likely to have been afforded had it not been for the fear of a reduction of the Government majority. Jonah was therefore flung to the waves, and sanitary authorities will be still left helpless in meeting the agitation against vaccination by the only means by which it can be withstood. The matter is not one of vital importance, but it points a moral which is still further illustrated by the course which the debate took on the more crucial question of the enforcement of the law. On this subject it is only necessary to point out that if the the Government had properly appreciated the difficulties of their position at the outset they might have made a concession to the opponents of vaccination which, though it would not have satisfied the Anti-vaccination League, would have effectually cut the ground from under the feet of the organised propaganda against vaccination, and they might at the same time have secured solid compensations for this concession in the direction of revaccination and of the general improvements of vaccination administration. They have now capitulated in a panic and are no longer masters of the situation. It will not be long before they find out their mistake, but it will in all probability be a long time before they will find such an opportunity for statesmanlike legislation as they have thus lost. A few more experiences like those of Gloucester and Middlesbrough will hurry it on, but meanwhile the administration of vaccination will be demoralised and, like the Sibylline books, the price that will have to be paid eventually for the neglected opportunities will be proportionately heavy.

Provisions not in the Bill.—Having thus dealt at some length with what the Bill as amended contains, it is only necessary to refer briefly to some provisions which it does not contain. First of all, it is entirely silent on the subject of revaccination, notwithstanding the strong representations made to the Government on the subject and the statement by Mr. Chaplin in debate on the second reading of the Bill that he would favourably consider any proposal made by Sir Walter Foster, who thereupon proposed an amendment in favour of it. The Bill, also, as has been before indicated, altogether ignores vaccination by private practitioners, who are to be as uncontrolled in deciding what is "sufficient" vaccination as they have hitherto been. Moreover, the sanitary authority will have as little power as it has at present to promote vaccination even in times of epidemic small-pox, and the medical officer of health will continue to have neither responsibility for, nor official connexion with, one of the most important branches of sanitary work. With these important matters, which lie at the bottom of the efficient promotion of vaccination, altogether ignored it is unnecessary to specify other points which are scarcely less essential in building up a system of effective administration. Some of these, to which it is unnecessary to allude here, were indicated in the memorandum on the Bill issued by the Jenner Society. It is, of course, not to be assumed for a moment that the Government are insensible to the desirability of incorporating all these provisions if they could have seen their way to do so. But, with the facilities for factious obstruction which the forms of the House of Commons offer it is practically impossible to deal with a subject of such a contentious character in a Bill which has any chance of getting through Parliament unless by a vigorous exercise of the closure or by buying off opposition with large concessions. The Vaccination Bill is only one of many illustrations of the increasing unfitness of Parliament, with its present antiquated regulations, for dealing with the legislative requirements which the ever-augmenting complexity of our social organisation demands.

In conclusion, as this meeting is held in a part of the United Kingdom by the experience of which the provision in the Vaccination Bill on the subject of enforced domiciliary visitation has been justified, it would be interesting to learn what that experience is at the present day compared with what it was when the Royal Commission took evidence on it seven years ago. It was then reported that vaccination prosecutions were almost unknown in Scotland; that there was practically no agitation against vaccination; and that no difficulty was experienced by those medical men who officially correspond with the public vaccinators of England in obtaining the vaccination at their own homes of the comparatively small percentage of Scotch children who were not vaccinated by private practitioners. In these matters one is inclined to ask, "Stands Scotland where it did?"

THE PATHOLOGY OF A FIT OF GOUT (PAROXYSMUS PODAGRÆ).[1]

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APART from the sudden onset of pain the most striking phenomenon connected with a fit of gout is turgescence of the veins leading from the joint affected for some distance along the foot. Where there is inflammation there is always an unusual amount of blood passing through the part affected, and there is also considerable œdema, but the circulation is free and there is never any visible turgidity of the veins leading from it. When veins appear turgid and swollen we know that this must arise from some hindrance to the onward flow of the blood, from some pressure external to the vessel, as from a tumour, or from some internal obstruction as from a thrombus. Such obstacles are readily recognised and are not present in a fit of gout. In a gouty attack the turgid veins, after coursing a certain distance along the foot, empty themselves naturally into the contiguous vessels, and gentle pressure readily forces the blood onwards, though when the pressure is removed the veins at once refill by reflux from the neighbouring vessels. In a fit of gout there is no direct obstacle to the onward flow of the blood and the venous turgescence must be due to some other cause. But the only other possible cause of venous remora is the occurrence of a block in a terminal artery or in its arterioles or capillaries.

Now we know that gout may attack any part of the body, but an acute attack—a paroxysmus podagræ—is never found save in connexion with one of the smaller joints, and most commonly in connexion with the metatarso-phalangeal joint of the great toe, because it is only in these positions that the conditions necessary for its development are present. An attack begins with a sudden onset of pain of the most excruciating character, perfectly explicable by the theory of a sudden block in the circulation cutting off the supply of nutritious pabulum from the adjoining sensitive nerves. Pain, as Anstie has told us, is the prayer of the nerve for more and better blood, for better nourishment, and, indeed, the only pain which at all approaches gout in severity is that following the occlusion of an artery, either artificially, as in the treatment of aneurysm by compression, or naturally, as in the blocking of an artery by an embolus

[1] A paper read before the Section of Medicine at the recent meeting of the British Medical Association.

or a thrombus, or the pain which precedes or follows an attack of Raynaud's disease. A stasis of the blood within the joint affected, however produced, may therefore be accepted as a perfectly rational explanation of the pain of gout.

The earliest visible sign of a gouty paroxysm is the appearance of turgid veins arising in the neighbourhood of the joint affected and running for some distance along the foot.[2] But stasis of the blood within the metatarso-phalangeal joint of a toe sufficient to cause the excruciating pain of gout is certain to be accompanied by the formation of an anæmic area in and around the joint, and naturally the veins connected with this area of negative pressure get filled by reflux from the contiguous valveless veins. The turgescence of these veins is in the foot somewhat favoured by gravity and it continues very evident until the veins reach a part where normal conditions of the circulation prevail—that is, where there is no longer any reflux because the veins have ceased to be valveless. While the veins have been gradually getting turgid plasma has been slowly accumulating within the area of negative pressure, and as the corpuscular elements have also escaped by diapedesis into the tissue interspaces and the red corpuscles readily part with their colouring matter to the plasma the turgid veins have not been long visible before we have a swelling in and around the joint, which becomes increasingly tense, stretching the skin and giving it a glistening appearance, all the more striking from the dusky redness due to the colouring matter of the red corpuscles. After a fit of gout the cartilages and other tissues about the joint are found to be infiltrated with crystals of urate of soda, a condition which is trifling after a first attack, but which increases with each succeeding paroxysm. This has been regarded by some as the result of the peculiar character of the gouty inflammation.[3] But from beginning to end of a gouty paroxysm there is neither sign nor symptom of inflammation and the presence of these crystals is susceptible of a simpler explanation. For in gout we know that the blood-plasma contains urates[4] which are not very soluble, and when the plasma accumulates within the anæmic area surrounding a gouty joint the salts slowly crystallise out of the extravascular fluid and get left behind when the serous part of the fluid is reabsorbed, infiltrating the joint, the cartilages, and the surrounding tissues and gradually accumulating after each succeeding paroxysm till they form those tophaceous deposits we know so well as the result of repeated attacks of gout. All the objective phenomena of a gouty paroxysm are thus readily explicable on the supposition of a stasis (or block) in the capillaries of the affected joint, and so far as I can see they are not to be explained by any other theory whatever.

There are also other facts connected with a fit of gout which go to confirm the theory propounded. First, we know that though the general organism of a patient suffering from a fit of gout is in a state of moderate pyrexia (100° to 102° F.), yet the temperature of the distal extremity of the affected toe itself is always subnormal (95·5° to 97°).[5] This apyretic state of the distal extremity of the affected toe is quite inconsistent with the presence of inflammation and seems only to be explained by an arrest of the circulation in the joint implicated. Second, there are some curious facts connected with the prophylaxis and the cure of gout which seem wholly inexplicable except on the supposition that the circulation is mainly at fault and that the prevention or removal of a stasis is sufficient to ward off or to cure an attack. In regard to prophylaxis we have the story that Mr. Apperley—the "Nimrod" of old times—tells us of a friend who after a skinful of wine and other good things always walked off the soles of his pumps before going home to bed in order to ward off a gouty attack, and this he did successfully and without damage to the end of his days. Cullen also tells us of a man who on the first premonition of an attack took his dog and his gun and walked it off.[6] Sir William Temple narrates that the Rhynegrave, who was killed before Maestricht in 1676 and was his personal friend, on the first indication of a paroxysm went out immediately, whatever the weather, and walked as long as he was able, "pressing most upon the foot that threatened him; when he came home he went to a warm bed and was rubbed very well and chiefly upon the place where the pain began." If the attack continued or returned next day the same course was pursued, so that he was never laid up with gout, and he thought so well of his treatment that he strongly recommended it to his son should he ever be attacked in a similar manner.[7] Temple also tells us of one of his brother's gamekeepers very subject to gout, but who never laid himself up. When attacked he busied himself with his deer or his stud, walking about from morning to night in spite of the pain.[8] And the late Dr. William Gairdner of London was acquainted with a lively old gentleman of eighty-five, who, when seized with gout, always replied to the remonstrances of his family and his physicians: "I'll walk it off," quaintly adding, "go to bed with the gout and it will surely go to bed with you and be mighty bad company"[9]—a remark that recalls the statement of Sir William Temple that gout haunts chiefly those who treat it as a friend and not as an enemy, who "carry it to bed with them and keep it soft and warm, and, indeed, lay up the gout for two or three months while they give out that the gout lays up them."[10]

As a method of treatment we hear but little of massage in medical literature, yet it must have been occasionally employed, as when Boerhaave[11] in his 1275th aphorism, section 8, speaks of curing gout "*exercitio magno, continuato, equitationis in aëre puro, tum frictionibus, motibusque partium sæpe iteratis*," the context shows that he speaks of these as approved methods to employ in the cure of an acute attack, and not merely as means to be used for the removal of the rigidity of gouty limbs during the intervals of comparative health. Cullen has also recorded some curious instances in which enforced exertion—not exactly carried out with due professional care—was followed by the sudden cure of gout. One patient, long confined to bed with gout, rose and ran off as fast as he could when his neighbour's house took fire. Another patient's provoked antagonist dressed himself up as a spectre, threw the poor patient over his shoulder, and carried him downstairs with his feet bumping on each step. As soon as the ill-used man reached the bottom of the stairs he found his legs and ran upstairs fast enough. It may be readily supposed that such rough empirical treatment, however successful, was not likely to be much approved of by the patients submitted to it or to be adopted by more regular practitioners. When the trifling succussion caused by merely crossing the floor to the bedside is liable to provoke intolerable agony he must be a bold practitioner who would venture to propose the application of massage to the offending digit itself. Yet this has not only been proposed but actually carried out with the most surprising results.

During the first half of this century a namesake of my own—Dr. William Balfour—practised in Edinburgh,[12] and had a great reputation for his successful treatment of rheumatic affections by the various methods we now comprise under the term massage. Occasionally, also, he attacked more acute ailments with a boldness and success which were truly remarkable. In the *Edinburgh Medical and Surgical Journal* for October, 1816,[13] Dr. Balfour relates several cases of acute gout treated by compression, friction, and percussion. These cases are all remarkable and all perfectly successful. I shall only quote one, as this is sufficient to show his method and its result.

CASE 1.—The patient, a man aged forty-seven years, of a cholerico-sanguine temperament and full habit of body, woke in the morning of July 22nd with violent pain in the balls of both great toes, particularly at the flexures of the joints. "When I visited him at eleven o'clock forenoon the parts were swelled, red, tense, and shining. The inflammation and pain were confined almost exclusively to the balls of the great toes, except that in the left, which was by much the worst, the pain reached upwards about half-way along the metatarsal bone. The patient experienced continual excruciating pain even when at perfect rest; his countenance indicated considerable distress, and he complained of sickness, general uneasiness and oppression; pulse 82. When I entered my patient's room he told me that if I intended to

[2] Sydenham's Works, Translation of the Sydenham Society, p. 125.
[3] Garrod on Gout, third edition, p. 187.
[4] Garrod, op. cit., p. 84.
[5] Sir Dyce Duckworth: A Treatise on Gout, p. 248, also Edinburgh Medical Journal, June, 1898, p. 564.
[6] Cullen: First Lines, second edition, 1778-84, MS. notes in copy in the library of the Royal College of Physicians of Edinburgh, p. 369, &c.
[7] The Works of Sir William Temple, Bart., Edinburgh, 1754, vol. ii., p. 127.
[8] Temple, loc. cit.
[9] Gairdner: On Gout, London, 1849, p. 114.
[10] Temple, op. cit., p. 128.
[11] Boerhaave: Aphorismi de cognoscendis et curandis morbis, Lugd. Batavorum, 1727, p. 212.
[12] Vide Obituary Notice in THE LANCET of May 9th, 1846.
[13] Observations, with Cases, illustrative of a New, Simple, and Expeditious Method of Curing Gout, p. 432 of the journal quoted.

apply friction to the parts affected, he was afraid he could not suffer it, for he had attempted that himself, but might as well have applied 'living fire.' I told him I knew that friction was quite inapplicable to his case as it then stood, but that I would, notwithstanding, employ mechanical means for moderating the paroxysm, and I hoped with complete success. I therefore grasped the ball of the toe in my hand, applying pressure gradually to a very considerable degree. Slight pressure gave pain; heavy pressure none. In this manner I compressed the parts, sometimes with one hand, at other times betwixt both hands, for about ten minutes, now and then interposing gentle percussion, and then applied a thin flannel bandage. Ordered a brisk purgative of senna and sulphate of magnesia. In the evening the patient said he had considerably less pain, or rather none at all, from the moment I left him, but he had a good deal of cold shivering during the day. His pulse was 100. The swelling and redness of the parts had much abated and motion of the affected joints was practicable. Compression and percussion were re-applied and were much better borne than in the earlier part of the day. Next morning the patient was found to have slept all night without interruption. His pulse was 80; pain, swelling, and redness of the parts almost entirely gone and he could suffer them to be handled with the utmost freedom. He walked very well. Compression and percussion were applied in the morning, in the evening, and again next morning, after which the patient went abroad in the prosecution of his business—on the third day of his attack."

The graphic account just given leaves no room for any doubt as to the nature of the disease or the success of the cure, and I am sure you will agree with me that any method able to cure acute gout in one or two *séances* is well worthy of the consideration both of patients and physicians. Not many, however, would have the nerve to apply such a cure or the courage to submit to it, and though Dr. Balfour has published several similar cases he has not, so far as I know, had many followers. Nevertheless I have recently heard that one old friend of my own, who saw a good deal of acute gout in the beer-drinking district in which he practised, was in the habit of benumbing the affected joint by painting it with Fleming's tincture of aconite and then rapidly completing the cure by massage.

The history of gout is not wholly comprised in a stasis of the circulation in the metatarso-phalangeal joint of the great or of any other toe, but if this is accepted as the explanation of an acute attack much is made plain which seems now mysterious and we obtain a clue sufficient to guide us through the labyrinth of symptoms presented by this protean malady. I am not desirous, nor have we time, to go deeper into the history of gout at present: I merely wish to bring before the profession for their consideration this simple theory of the cause of a paroxysmus podagræ as it seems to be the only explanation capable of interpreting the phenomena observed and also of adequately accounting for the success of the methods of prophylaxis and of cure which I have just described.

Edinburgh.

THE OPERATION OF GASTROSTOMY PERFORMED BY THE KADER-SENN METHOD,

WITH TWO CASES SUCCESSFULLY SO TREATED.

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So simple, so expeditiously effected, and withal with such excellent result, is the method of Kader-Senn for performing gastrostomy that its mode of execution needs only to be more widely known to be, I venture to think, almost universally adopted. This is high praise to accord to any particular method employed for whatever purpose, and yet I feel impelled to give it, although it is an opinion based upon its adoption in two cases only; but with simply these two cases it is difficult to see where success should fail to be obtained in an unlimited series. Every operation appeals to the surgeon in proportion to its simplicity, and when that simplicity ensures success in the object aimed at little else is required to commend it.

The numerous modifications which have from time to time been introduced all aim at the one object of preventing leakage from the stomach through the artificially established orifice. Some of these modifications have unquestionably attained this end. Thus those introduced by Frank, Witzel, Hahn, von Hacker, Gérard, and others have all more or less succeeded in this respect. But as contrasted with the Kader-Senn method they cannot lay claim to such simplicity and rapidity of execution. Whether this operation has been tried already by British surgeons I do not know, but so far as it has been practised in America those who have recorded cases speak unanimously in its favour. The following is the account of the operation as described by Senn[1]: "The operation consists of an abdominal incision of about 4 in. in length, and which can be made in any location deemed advisable, as no abdominal muscular structures are required for sphincter action. However, Fenger's incision, which is parallel to the left costal border left of the rectus muscle, is preferable. The stomach is seized as near the great curvature as possible and a cone is formed by an assistant who holds the apex with his fingers or a tissue forceps. Two puckering strings of heavy chromicised catgut are placed parallel to each other about 2½ in. below the apex of the cone. These sutures include the serous and muscular coats of the stomach. These sutures are next drawn taut and tied, forming a constriction or neck. ..... The stomach is now ready to be fastened into the parietal wound. This is done with interrupted silk sutures, which include ..... the peritoneal and muscular coats of the stomach and all the abdominal wall except the skin. The rest of the abdominal wound is now closed with silkworm sutures, leaving only that portion of the stomach visible which is to form the valve. This concludes the first stage of the operation. The second stage can be done at this time or can be deferred for forty-eight hours until adhesions have formed. This consists of an incision about half an inch in length in the centre in the portion of the stomach exposed. A rubber tube is inserted through the opening into the stomach. The stomach wall is now inverted, forming a circular valve. The inversion is secured by Lembert sutures of silk. The tube is now withdrawn and the operation is completed. If properly performed the valve should be below the level of the external integument. The retraction is greatly favoured by subsequent contraction of the wound."

The following is an account of the two cases upon which this operation—with some slight modification to be afterwards referred to—was successfully performed. The brief abstract given in each case is from the report taken by the resident assistant, Dr. Vost.

CASE 1.—A man, aged fifty-seven years, was admitted to the Victoria Infirmary, Glasgow, suffering from carcinoma of the œsophagus. His illness commenced about three months prior to admission, at which time he began to find difficulty in swallowing solids, and that every attempt was immediately followed by their ejection. Fluids he could always keep down. When he tried to swallow anything solid he was conscious of it sticking in his gullet and pointed to a place at the level of the ensiform cartilage where it caused severe pain. His bowels were regular, his tongue was moist and slightly furred. He had lost flesh and looked emaciated, with a dry rough skin. He was much troubled with flatulence. An olivary bougie, which passed down 16 in., could not be made to enter the stomach, but with a railway bougie the internal filament could be passed into the stomach. On Nov. 8th the patient was prepared in the usual way by the administration of an aperient. On Nov. 9th, immediately prior to the operation, copious water enemata were given, followed by a nutrient enema. With the assistance of Dr. Grant Andrew, Dr. Vost, and Dr. Fleming, gastrostomy was performed. A median incision was made between the umbilicus and the sternum. The stomach was sought for and found to be much contracted, lying well up under the liver to the left. A digital examination did not definitely reveal any growth towards the cardiac end, but some small suspicious nodules could be felt. The stomach was then pulled up by a fixation stitch and the circumference of a circle measuring about from 1½ in. to 2 in. in diameter carefully stitched to the parietal peritoneum. The wound was then closed above and below. The cone-shaped projecting portion of the stomach was then encircled at its base by two purse-string sutures, the ends of which came out at

[1] Journal of the American Medical Association, 1896, vol. xxvii., p. 1143.

opposite points. The apex of the cone was then incised and the stomach was opened. A gum elastic catheter, No. 12, was inserted into the stomach for about 3 in., and secured by a stitch to the gastric parietes at the apex of the cone. By pushing in the catheter the cone was invaginated, and then by drawing upon the purse-string stitches the gastric parietes were puckered up and made to embrace the catheter so that it became secured in position. The catheter was cut nearly flush with the wound and a small plug was inserted. The operation lasted about an hour. The patient took chloroform well and rallied well. He proved in his convalescence a very restless patient and so retarded somewhat the healing of the wound. However, his recovery eventually was perfect. He left the infirmary about two months after the operation (Jan. 25th, 1898) and returned to report himself on Feb. 16th, when the fistula was found to be all that could be desired. There was no leakage and feeding was easily accomplished with the catheter attached to an india-rubber tube and a glass funnel or filler.

CASE 2.—A woman, aged sixty years, was admitted to the Victoria Infirmary on Nov. 9th, 1897, suffering from difficulty in swallowing solids. She stated that about two months previously her trouble commenced, when every now and again solid food which she took would be immediately returned. Fluids could be taken without difficulty. She experienced no pain except when endeavouring to swallow something solid and then referred the sense of discomfort to the neck about opposite the cricoid cartilage. She had usually to take aperient medicine to obtain a movement of the bowels. She stated that she had lost strength and flesh. In appearance she was much emaciated, with a pale, dry, rough skin. The passage of an olivary bougie encountered obstruction about 13 in. from the incisor teeth. After the usual preparation of the patient gastrostomy was performed on Jan. 1st with the assistance of Dr. Grant Andrew, Dr. Vost, and Dr. Fleming. The only difference in the method of operating from that employed in the above case was the use of a smaller size gum-elastic catheter (No. 8). The patient took chloroform well and rallied without any shock. The operation lasted thirty-five minutes. The patient made a rapid and uninterrupted recovery, leaving the infirmary on Jan. 20th, 1898. She was able to feed herself, as in the first case, by the aid of a catheter, rubber tube, and filler. There was absolutely no leakage of the contents of the stomach.

By referring to the illustration, which represents the method employed in these two cases, it will be seen that the

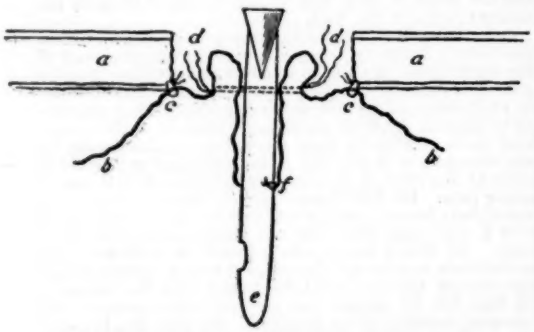

Diagram of operation of gastrostomy. *a*, Abdominal parietes. *b*, Gastric parietes. *c*, Fixation stomach stitches. *d*, Purse-string stitches. *e*, Catheter. *f*, Fixation stitch of catheter and stomach.

operation is in many respects simply a modification of that introduced by Witzel. Instead, however, of the tube being fixed in an oblique fold of the stomach wall it is secured in a direct channel. According to Senn, Kader of Breslau had anticipated him in the adoption of this modification, with only some slight difference in the mode of suturing, and if, therefore, a name should be applied to it it would be better to designate it the Kader-Senn operation. Senn himself in his original description calls it "a circular valve method"; but this, while it to some extent indicates the result obtained, does not wholly convey to the mind the practical mode of procedure, which is the inversion and fixation of a cone of the gastric parietes with a permanent orifice at its apex. Naturally this fixed cone tends to collapse upon its base when the supporting gum-elastic tube is removed, and in so doing acts as a circular valve inhibiting the escape of the gastric contents.

In reviewing certain features connected with these cases it will be observed that in neither was the patient *in extremis*. Both patients could take plenty of fluid nourishment and therefore from the aspect of necessity there was no need of the operation; but, on the other hand, in view of the certainty that sooner or later difficulty would arise in the ingestion of fluids and the patient's strength and general vitality become gravely impaired, it appeared at least expedient that the favourable opportunity afforded should not be missed and the operation therefore performed without undue delay. This particular aspect of the question becomes all the more feasible when we are able to ensure the extreme probability of no immediate ill effects from the operation and the almost absolute certainty that the patient's sufferings if relieved in one way would not be augmented in another, as by the frequently troublesome irritant after-effects dependent upon the escape of the acid gastric juice through the fistula. It has been suggested that the operation should be carried out in two stages, but I believe that when the stitching is all carefully executed there need be no fear regarding the opening of the stomach at the one operation. A properly fitted plug would effectually prevent any escape through the catheter, and it is quite impossible for any leakage to take place along its sides. If thought advisable in severe and advanced cases fluid nourishment can be safely administered by the catheter at the operation, but otherwise a day or two may elapse before making use of the artificial opening. While in such cases as those above narrated there is no necessity for the administration of fluids other than by the mouth there is a distinct advantage in doing so. For what we found was that in both instances the rest which accrued to the strictured part of the gullet from the temporary introduction of all food by the catheter allowed them to take nourishment subsequently by the mouth of a much more substantial consistency than they had previously been able to do and this, too, without the pain which, in the case of the man, had always been of a distressing character. Porridge, bread-sop, and farinaceous puddings were among some of the foods of a more solid nature which they were now able to swallow with relish and comparative ease.

As regards the size of the tube used and its period of removal I employed in the first case a No. 12 gum-elastic catheter and removed it on the fourth day. In the second I used a No. 8 and allowed it to remain in until it became sufficiently loose to be extracted, which was in about a fortnight. When the latter was withdrawn the intra-gastric portion did not seem to have undergone any digestion. Without going into the reasons I may say that I should prefer in future the larger size catheter and its retention until loosened.

Concerning the after-treatment some care is necessarily required to prevent closure of the fistula. In the second case, in which the No. 8 catheter was used, there was a distinct tendency in this direction. We at first found that the daily passage of a bougie or catheter sufficed to maintain its patency, but soon the difficulty so increased that often in the morning the orifice was found glued over and the patient was unable without assistance to insert the catheter. This, however, was easily obviated by using a small vulcanite shield with a bougie-like projection one and a half inches long attached to the centre of one surface. This was tied in like a tracheotomy tube and inserted into the fistula over night. By this simple contrivance the patient no longer had any difficulty in inserting her catheter for feeding purposes when she required to do so.

In summing up the advantages of this method of performing gastrostomy I think it may justly lay claim to the following:—(1) the extreme simplicity and safety of the operation and its rapidity of performance; (2) the almost practical certainty that no subsequent leakage of the gastric contents will take place; and (3) the safety of the operation and the absence of any remote ill effects renders its early performance advisable, that is, as soon as solids can no longer be taken. In connexion with this last clause there may be added the still further advantage gained by the patient in being able to take more substantial nourishment by the mouth and with less pain. This relief no doubt results from the rest which the diseased part of the gullet derives from all food being conveyed to the stomach by another channel. It

admits of the subsidence of any irritative inflammation about the seat of the stricture so that exudates are absorbed and muscular spasm is lessened. It is therefore impossible not to conclude that though the operation of gastrostomy successfully executed is only palliative, it is nevertheless likely to be the means of prolonging life longer if performed early than when the period of necessity has been reached; in other words, before and not after difficulty in swallowing fluids has occurred.

Glasgow.

VACCINATION RASHES.

BY ROBERT J. CARTER, M.D. LOND.,
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IT is a question of some importance what precisely may be the influence of vaccination in the production of various skin eruptions. Has vaccinia such an effect upon the human organism as to render the skin more liable to become affected by rashes, or are we to regard as a mere coincidence the fact, which is undoubted, that children, and indeed adults, may after vaccination suffer from various forms of skin eruptions? The truth would appear to be between these two extremes. Vaccination is undoubtedly responsible directly for some forms of eruption, and indirectly in a remote degree for others; but it is manifestly unfair to ascribe to vaccination an eruption which appears weeks, or even months after the lesion produced by the operation has soundly healed. In my experience post-vaccinal rashes are uncommon—that is to say, such rashes as may occur within a period of time in which it may reasonably be supposed that the course of vaccinia has in some way or other been instrumental in causing their appearance. What this limit of time after vaccination may be at which eruptions of the skin may appear, due indirectly or directly to the operation, it is difficult to state precisely. Dr. Crocker states that in no case can an eczema be due to vaccination where the vaccine pustule has completely healed before the appearance of the eczema. Personally I should hesitate to ascribe any rash as due to vaccination except vaccino-syphilis, when after examination the site of the vaccination is found soundly healed, which may roughly be taken as occurring from 4 to 5 weeks after the operation. The results of recent researches have made it clear exactly what vaccination is and we are consequently better able to gauge its likelihood of causing skin affections as compared with other acquired diseases. That true vaccinia may result from the inoculation of a modified attenuated variolous lymph cannot now be questioned. Variolous lymph by its passage through a series of calves becomes so attenuated and modified that it can no longer produce violent constitutional effects with a generalised eruption, but only a slight constitutional disturbance and an eruption limited to the points of inoculation, and a condition of the organism is produced which renders it immune against variola or vaccinia for a variable period of time. How this immunity is produced, whether by the organisms of the vaccine virus multiplying in the body and by their life and growth producing complex chemical bodies, which by absorption produce a change in the human tissues, rendering them immune, or, as Dr. Cory suggests, whether the whole production of such chemical bodies takes place in the vaccine vesicles, may be an interesting speculation, but leads nowhere. What interests us more is the certain fact that for our purpose vaccinia may be practically classed amongst the other exanthemata, that it is a constitutional disease which more or less profoundly affects the whole of the tissues of the human organism in which it occurs. That some tissues in the same organism are affected more profoundly than others is a well-known clinical feature in every constitutional disease and it would appear quite easy to conceive that in certain individuals vaccinia may produce a condition of cell change and tissue alteration in the skin causing the appearance of a rash, the type of such rash varying with the individual peculiarity of the skin—a peculiarity not of texture, complexion, &c., but physiological and vital. These remarks only refer to what are termed "pure vaccination rashes," that is, due to the inoculation of pure vaccine virus and not to extraneously introduced germs. The connexion between vaccination and the eruptions due to extraneously introduced germs is absolutely one of cause and effect and requires here no further discussion. Owing to the enormous percentage of children vaccinated in the present day (practically in London over 90 per cent.) had vaccinia much influence as a causative agent in the production of skin affections surely they would have increased *pari passu* with vaccination. This I venture to doubt, for a reference to writers of the pre-vaccination days certainly leaves one with the impression that such a disease as infantile eczema was as common then as now. As far as I have been able to ascertain there are no published figures as to the possible frequency with which post-vaccinal rashes may occur and, in fact, the whole literature of the subject is very meagre. As a possible result of the paucity of such literature and references in standard works many rashes are ascribed to vaccination, not only by the parents of children, but by medical practitioners, which have absolutely no connexion with vaccination either near or remote. A case of generalised eczema wrongly ascribed by a medical practitioner to vaccination is a centre from which all kinds of anti-vaccinationist poison emanate. The possible dangers of vaccination are absolute and quite real enough without the invention of bogies to frighten weak-minded people about an operation, which is probably the most important to the community at large of any we are ever called upon to perform.

It is true that "from their rarity post-vaccinal rashes are unimportant," to quote the words with which one writer dismisses the subject, but it appears to be of the utmost importance that every medical practitioner should have a precise and definite knowledge of the subject so that he may successfully combat, on the one hand, the prejudices of the parents and the glaring misstatements of the anti-vaccinationists on the other, and to be able readily to demonstrate the fallacy of the *post hoc propter hoc* argument so often and so dangerously applied to vaccination and subsequent rashes.

Vaccination rashes have been variously classified. Dr. Crocker's modification of the one by Mr. Malcolm Morris would appear to be the most complete, and, with an addition of my own, is the one I shall use as a basis for my remarks.

CLASSIFICATION OF VACCINATION RASHES.

Group I.—Eruptions resulting from pure vaccine inoculation. *A*, Secondary local inoculation of vaccine. *B*, Eruptions before the vesicles form, urticaria, erythema multiforme, vesicular and bullous eruptions. *C*, Eruptions after formation of the vesicles due to the absorption of the virus: (*a*) morbilliform, scarlatiniform and diffuse erythema, erythema multiforme, vaccine lichen, purpura; and (*b*) generalised vaccinia. *D*, Sequelæ of vaccination, eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes.

Group II.—Eruptions due to the vaccine plus some other virus. *A*, Introduced at the time of vaccination: (*a*) producing local disease, impetigo contagiosa, or other form of superficial inflammation; and (*b*) producing constitutional disease, syphilis, leprosy, and tuberculosis. *B*, Introduced after development and rupture of the vesicles (about the eighth day), erysipelas, cellulitis, impetigo contagiosa, furunculosis, gangrene local or disseminate, pyæmia.

This classification shows how varied in character post-vaccinal rashes may be and that they are almost as numerous as there are rashes to which an individual is liable. What determines the precise nature of the skin manifestation is, as I suggested above, a physiological and vital peculiarity of the tissue, or what is more popularly called "the idiosyncracy of the patient." That this must be is evident from the fact that of several children vaccinated from one source only one may exhibit post-vaccinal rash, or if there be two the rashes are of a different nature. The fact also that post-vaccinal rashes are even more frequent (according to the authorities) after vaccination with calf lymph than with humanised lymph points in a similar direction. It is a well-known clinical fact that local irritations in susceptible individuals may produce generalised skin eruptions. The wet napkin in infants, a chronic nasal catarrh, profuse perspiration, the use of certain irritants for the purposes of trade, and many others may, and indeed do, produce an inflammatory reaction in the skin by no means confined to the point of contact. Equally, then, vaccination in certain cases, the local irritation in the arm having superadded to it

the constitutional effects of vaccination, is liable to produce skin eruptions the exact type of which depends upon some peculiarity of the individual tissues, about which we know nothing and can surmise less We may now discuss more or less in detail the classification of post vaccinal rashes given above.

In Group I. under section *A* we have the secondary inoculation of vaccine. This may be auto-inoculation or accidental as apart from vaccination. As an instance of the latter some time ago I saw a female, seventy-two years of age, with a typical vaccine vesicle on the cheek. This was the result of nursing an infant whose vaccine vesicles had been opened on the eighth day, whilst on her cheek was a scratched papule which allowed the introduction of the lymph from the child's arm. Many such accidents have been recorded: vaccine vesicles on the eyelids, where their resemblance to primary syphilitic sores renders them important, on the tongue, and a remarkable case where a child suffering from eczema of the face and scalp sleeping with an elder child who had recently been vaccinated was inoculated by the latter, so that the whole eczematous area became the seat of vaccinal vesicles. It is a noteworthy point in secondary auto-inoculation that the secondary vesicles are more rapid in their formation than the primary and reach maturity almost as quickly.

Subsection B.—Urticaria may follow vaccination in infants just as in adults it may arise from apparently most trivial causes. It, however, differs from the urticaria of adults and presents the well-known clinical picture of urticaria papulosa, an affection most difficult to treat, resisting more or less effectually all therapeutic measures to yield at length to the lapse of time. Of the erythema multiforme, vesicular and bullous eruptions mentioned in the classification, but few writers even mention them, and then only by name; personally I have never seen such post-vaccinal rashes occurring before the formation of the vesicles.

Subsection C.—In this subsection the eruptions are due to the absorption of the vaccine virus and divide themselves naturally into two groups: (*a*) morbilliform, scarlatiniform, and diffuse erythema, erythema multiforme, vaccine lichen, purpura, and (*b*) generalised vaccinia. Under (*a*) it is curious to note that the morbilliform, scarlatiniform, diffuse erythema and purpura may all occur preceding the appearance of the exanthematic manifestation of small-pox. May not a peculiar condition of tissue in the organism reacting to the poison of variola react similarly to vaccinia? Certain it is that in both cases they occur but rarely. With the title roseola, erythema vaccinal (French), roseola vaccinia (German), occurs a fairly common erythematous eruption which some observers describe as the commonest form of post-vaccinal eruption. It appears about from the eighth to the eleventh day, but according to Hebra as early as the third or as late as the eighteenth day after vaccination. Kaposi describes it as the most frequent complication of vaccinia and states that it commences around the vaccine vesicle and gradually spreads over the body. In my experience it is a rosy red rash not unlike measles, the macules varying from a pin's point in size to the size of a five-shilling piece. It is not attended with any constitutional symptoms and fades after three or four days without any desquamation. Dr. Radcliffe Crocker describes a vaccine lichen which he considers the commonest post-vaccinal eruption. According to his description it may be papular, papulo-vesicular, pustular, rarely bullous, appearing on from the fourth to the eighteenth day, most usually on the eighth day. It commences on the arms and by successive crops may spread over a considerable part of the whole body, evenly distributed, sometimes becoming circinate. The papules are acuminate, pin's-point sized, bright red, and may remain so to the end, usually discrete, but occasionally coalesce into patches, often many of the papules are crowned with small vesicles or pustules and occasionally the whole eruption may be vesicular, such vesicles coalescing and becoming bullous, as recorded by Behrend. The rash lasts usually a few days, but occasionally successive crops appear attended by considerable itching, resembling Hutchinson's varicella prurigo. This account, taken from Dr. Radcliffe Crocker's book on Diseases of the Skin, corresponds closely with the vaccinal miliaria described by Dauchez in his work on vaccination rashes. Dr. Colcott Fox suggests that the different phases of vaccine lichen probably represent stages of the same inflammatory process. Both Behrend and Crocker have recorded cases of typical post-vaccinal erythema multiforme.

A purpuric rash may occur after vaccination in cachectic children. Cases have been reported by Gregory and Dauchez but are extremely rare. Under (*b*) generalised vaccinia is probably the most important of Subsection C. Under exceptional circumstances, chiefly after vaccination with calf lymph, the vaccine eruption, instead of being confined to the points of inoculation, is more or less widely spread over the body. It is still a debatable question whether these cases are due to general blood infection or whether the secondary vesicles are the result of auto-inoculation. According to the various writers the rash appears about the eighth day and its course resembles that of a vaccine vesicle. In the fatal cases inflammation and sloughing take place at the site of the vesicles, producing a condition exactly resembling varicella gangrenosa. In this country Mr. Hutchinson has seen and recorded several such cases. Dr. Cory, the Local Government Board Inspector, in his recent work describes cases similar to varicella gangrenosa as due to disseminated tubercle, but does not mention generalised vaccinia. Dr. Colcott Fox states that they are always the result of auto-inoculation. French dermatologists are generally agreed that there are two distinct kinds of generalised vaccinia (*a*) appearing spontaneously and (*b*) the result of auto-inoculation.

Subsection D comprises the sequelæ of vaccination—viz., eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes. Of these from its frequency eczema is important. Dermatologists differ in their opinions as to the frequency of eczema caused by vaccination, but all appear to agree with Dr. Crocker that no case should be ascribed to vaccination which has appeared after the vaccination has soundly healed. This consensus of opinion clears the ground and effectually disposes of the very large majority of infantile eczemas ascribed by parents to vaccination. A curious well-authenticated clinical observation is that vaccination sometimes cures an attack of eczema, and indeed has been recommended as a legitimate form of treatment not only in adults but in children. In the latter, however, when the eczema is acute it is attended with great risk owing to the possibility of auto-inoculation. There can be no doubt that in predisposed people eczema may follow vaccination, as it might any other form of dermatitis, however produced, but there is nothing in vaccinia *per se* which can cause an outbreak of the disease. What this predisposition to eczematous forms of dermatitis consists of, in the present state of our knowledge, it is impossible to say definitely. It has been explained as "a want of resistance in the epithelial structure" or as "vulnerable epithelium," but such explanations do not assist us much. Certain it is that in the predisposed any slight local irritation may give rise to a widespread attack of eczema. When following vaccination eczema may commence in the region of the vesicles and gradually spread, or, more rarely, a large area of the skin may become suddenly attacked. It usually appears on or about the tenth day of the vaccinal period and in its course and amenability to treatment would appear exactly to resemble eczema of other origin.

Post-vaccinal psoriasis is sufficiently rare to be a clinical curiosity. Chambard has described one case and Rohè two acute cases. Pemphigus is barely mentioned in French and English literature as following vaccination. The German dermatologists describe it, however, as occurring occasionally in weakly infants and they differentiate it from ordinary pemphigus due to cachexia on account of the fact that the prognosis in post-vaccinal pemphigus is distinctly favourable, physically their appearance being identical. Urticaria may occur as a sequela in point of time, but its association with vaccination would appear to be one of coincidence.

Congenital syphilitic rashes I place under the head of sequelæ, although apparently none of the various classifications published include them. In view of their extreme importance, both from a medical and lay point of view, their possible occurrence should be always borne in mind. That definite syphilitic rashes occur after vaccination it is impossible to deny, and it is of the utmost importance that not only should they be recognised as such, but that they should be attributed to their real source—namely, congenital infection. In Group II. syphilis occurring as the result of vaccination due to vaccine lymph plus the syphilitic virus will be treated, but in this group the clinical facts are quite dissimilar. The usual history obtained is that on or about the tenth day after vaccination an obviously syphilitic rash appeared. It hardly requires, except for the fact that so many misstatements have been made, that it should be

pointed out that such a syphilitic rash is due, not to syphilis introduced at the time of vaccination, but to a congenital infection. No rash in the case of inoculated syphilis ever appears before, at the very earliest, fifty days after inoculation. Apparently in the case of a child suffering from congenital syphilis, vaccinia produces enough local irritation and general constitutional disturbance to cause the appearance of skin manifestations, vaccination simply determining the date of the appearance of the skin lesions. Notwithstanding the fact that calves are absolutely immune against syphilis, congenital syphilitic rashes much more frequently appear after vaccination with calf than with humanised lymph.

Group II. consists of post-vaccinal rashes more or less preventable. Certainly Section A, those due to a virus plus the vaccine virus introduced at the operation of vaccination, are, with the exercise of ordinary precautions, absolutely preventable, and when occurring indicate culpable negligence on the part of the operator.

Subsection (*a*).—As a result of the introduction of pus cocci impetigo contagiosa may occur. This is a very rare accident, accidental inoculation taking place much more frequently after rupture of the vaccine vesicles. Short of true impetigo contagiosa slight forms of superficial inflammation may occur as a result of the introduction of one or other of the organisms found in pus.

Subsection (*b*).—The occasional inoculation of syphilis with vaccinia cannot be denied and is the great weapon in the hands of the anti-vaccinationists, but it has happened so rarely as practically to become a clinical curiosity, and with the introduction into general use of calf lymph will disappear altogether. When syphilis is inoculated simultaneously with vaccine virus, according to Fournier three alternatives present themselves: (1) syphilis is not transmitted but vaccinia is; (2) syphilis is transmitted and vaccinia fails; and (3) both are transmitted, some points of inoculation giving rise to typical vaccine vesicles, whilst later a syphilitic chancre or chancres appear at a point of inoculation when vaccinia has failed. Hutchinson states that a syphilitic chancre may follow typical vaccine vesicles in the same site. Fournier gives an excellent table in his clinical lecture on the subject, as to the differential diagnosis of vaccino-syphilis which is too long to give here. Briefly, he points out that the syphilitic chancre is limited to one or two points of inoculation, inflammation is slight, loss of substance is superficial, and the parchment induration is typical, not inflammatory. The acquired syphilitic rash appears at the earliest from fifty to ninety days after vaccination and requires in every case the existence of a specific sore at the site of the vaccination. In fact, vaccino-syphilis is in no way different from syphilis acquired in other ways and follows precisely the same course.

In this country the question of the introduction of leprosy with vaccinia is purely academic and the reported evidence from other countries is very conflicting. Tuberculosis is a disease which is confidently asserted by the anti-vaccinationists as likely to be introduced by vaccination. In Germany many experiments have been made with lymph from tuberculous patients with uniformly negative results. Attempts to inoculate the skin of guinea-pigs—animals most susceptible to tuberculosis—have invariably failed. That the skin of the human organism, however, is susceptible to the inoculation of tubercle cannot be denied, as cases have been reported where a local tuberculosis has been produced from tattooing and the like. Recently at the Dermatological Society of London a case was shown in which, although there was no microscopical or bacteriological evidence, yet the majority of those present agreed that the appearance was that of a local tuberculosis the result of vaccination. The question, however, of the transmission of the three diseases, syphilis, leprosy, and tuberculosis, by vaccination is probably solved by the introduction of glycerinated calf lymph by the new Vaccination Act of the present Government and ought to go a long way towards disarming what might be a legitimate criticism of vaccination.

Section B of Group II. comprises rashes due to the introduction of a virus after the formation and rupture of the vaccine vesicles. Of these by far the most important is erysipelas. It is possible that the pathogenic organism of erysipelas may be introduced into the patient on the eighth day by the operator opening the vesicles, but the accident must be excessively uncommon. After the opening or rupture of the vesicles the introduction of the erysipelas organism is not so uncommon and in the large majority of cases occurs when the child is living in bad hygienic surroundings. The characteristic rash of erysipelas generally appears within 24 hours after inoculation around the vesicles and spreads rapidly. In young infants it is very fatal and it was on this account that in the new Vaccination Act it was first proposed to raise the age limit at which vaccination must have been performed from three months (as now) to one year, statistics showing that the death-rate from erysipelas gradually diminishes with each succeeding month of the first year of life. Cellulitis mentioned in the classification is probably erysipelas complicated with pus cocci. Impetigo contagiosa is not uncommon after the rupture of the vesicles, around which it spreads and by the child's fingers may be carried to other parts of the body. Furunculosis is described as occurring as the result of the absorption of pus cocci into the system, their dissemination and ultimate arrest in the skin.

Gangrene local or disseminate. A local gangrenous action the result of septic poisoning may sometimes be seen at the site of the vaccination. A large black slough forms, which when detached leaves a deep ulcer which takes weeks to heal. Clement Lucas has reported a fatal case in an infant three months old. Disseminated gangrene the result of vaccinia is an exactly similar condition to that described as varicella gangrenosa. The lesions commence as a pin's-head sized papulo-pustule generally on the vaccinated arm and appear all over the body in crops. The pustule ruptures, a scab forms with an inflammatory aerola, and the centre becomes a black slough. Barlow has pointed out that the majority of cases, whether occurring after varicella or vaccinia, are associated with tuberculosis.

Cases of pyæmia after vaccination have been reported. As clinical curiosities may be mentioned the case published by Diday where a growth of hair took place around the cicatrix of a vaccination performed on the anterior part of the thigh of an infant eleven months old, and the occasional occurrence of keloid in the vaccination cicatrix, two cases of which have been reported.

Acacia-road, N.W.

NOTES ON THE

LOCALISATION OF A CENTRE IN THE BRAIN CORTEX FOR RAISING THE UPPER EYELID.

BY W. HARTLEY BUNTING, M.D., F.R.C.S. EDIN.

ALTHOUGH most of the motor centres in the brain cortex have for some time been accurately defined the centre for raising the upper eyelid is as yet uncertain. The very existence of such a centre has indeed been doubted by some, who hold that the centre for the levator palpebræ superioris along with that for all the extrinsic muscles of the eyeball is intracortical and is situated somewhere in the region of the corpora quadrigemina. I think, however, that there is strong evidence to show that a cortical centre does exist and that it is situated far forward in the general motor area. There are some difficulties which present themselves in the way of experimentally localising this centre. In the first place, since the eyelids on the two sides under normal conditions act together, one finds that the centres in the two halves of the brain for raising the lid are so intimately associated that compensation after destruction of the centre on one side readily takes place and ptosis is frequently not observed at all, or, if noted, it is quite temporary, the opposite side taking on the function; this theory was first advanced by Wernicke. Horsley as the result of the study of a clinical case arrived at the same conclusion, and he says that when cortical ptosis exists from damage to one side only of the brain cortex the centres for the elevators of the upper lid are not so closely associated as usual. Again, fallacies have doubtless arisen from the fact that all the external ocular muscles, the levator palpebræ included, may be excited to coördinated movements by vigorous stimulation in many parts of the brain cortex; moreover, it is but rarely that one has the opportunity of making a necropsy in a case of cortical ptosis, or if such an opportunity does occur, the lesion is probably so extensive as to render the results in this direction negative.

Landouzy and Grasset advanced the theory that a centre for movement of the upper lid could be localised in the angular gyrus. The lesions, however, in Landouzy's case

were, I think, too extensive to admit of the definite conclusions he draws. Lemoine also quotes a case of long-standing ptosis in which, at the post-mortem examination, he found a lesion in the angular gyrus, and he agreed with Landouzy as to the position of the centre. Hirt and others, more recent writers, also hold this opinion. Ferrier thinks that these conclusions are not warranted by experiment. He says, "Some such cases" (that is, of ptosis due to a small lesion in a definite area of the cortex) "have been observed in connexion with diseases of the cortex, and attempts have been made, but not, I think, successfully or in accordance with experimental lesions, to localise this centre in the angular gyrus. If a distinct volitional centre for the levator palpebræ superioris exists in the human brain I think it must be sought for at the base of the first frontal and extending partly into the second frontal convolution of the brain. Here is an area, irritation of which in the brain of the monkey causes elevation of the eyelids." Ferrier found, moreover, in applying stimulation to this area that if the stimulus were very faint elevation of the lids was the only movement that followed. Although movement of the eyelids can be seen on stimulating the angular gyrus the latent period, as pointed out by the same observer, is one-hundredth of a second longer than in the case of stimulation applied to the oculo-motor centre in the frontal lobe. Schäfer and Ferrier both found that when the angular gyrus was destroyed on both sides in the brain of a monkey, no ptosis was produced; and movements of the lids caused by stimulating this area are probably due to association with the frontal region. In one of Ferrier's experiments he extirpated the greater part of the frontal lobe in a monkey; ptosis with some disturbance of ocular movement was the only paralytic effect produced.

De Bono, as a result of the study of clinical cases, came to the conclusion that a cortical centre for the levator palpebræ superioris could be localised in the fore part of the brain. The two cases from which he chiefly drew his conclusions were both in young women affected with ptosis and subject to epileptiform attacks. In the one case the ptosis was congenital, and in the other it was of four years' duration. The epileptiform attacks in both cases began in the arms, and spread sometimes to the face and legs. De Bono thought that the lesion which caused the ptosis was also very probably the focus from which started the convulsions; and upon this he founded his theory that the centre for elevation of the lid must be closely associated with the centre for movement of the arm. Examination of the skull of the patient suffering from congenital ptosis revealed a depression about one finger's width in the zygomo-Rolandic line, 93 mm. from the external auditory meatus and 102 mm. from the orbital margin. This appeared to have resulted from an injury at birth, which was a difficult one, and it was considered by De Bono to be the cause of the ptosis. A study of similar heads showed that the depression corresponded to the anterior central (or ascending frontal) convolution at the junction of the middle with the upper two-fifths. Experiments on living dogs seemed to confirm this observation; and De Bono arrived at the conclusion that a centre for elevation of the lid of the opposite side could be localised in the anterior central convolution rather above the middle in front of the motor centre for the arm and above that for the face. These results of clinical observation are very similar to those arrived at by Ferrier's experiments.

Several cases of ptosis, as a result of blows upon the top of the head, have been reported. Thus Mr. Hulke, in the Reports of the Royal London Ophthalmic Hospital, gives such a case, which he thought was due to direct injury to the cortical centre, but it is more probable that such results are, generally at least, due to a lesion at the base. The following case, however, which is from the notes of a case which was under my own observation, points strongly, I think, to frontal localisation of the cortical centre for the levator of the eyelid.

A boy, aged twelve years, was swinging round a giant's stride when the iron wheel and arms on the top of the pole came off and fell, striking him on the top of the head above the right eye. When I first saw him, sixteen hours later, he was semi-conscious and lay quietly with both eyes closed unless irritated. He could, however, open both eyes widely and there was no paralysis of any muscle or group of muscles. On removal of the carbolic compress which had been applied a large spoonful of brain matter was seen protruding from the anterior extremity of a large jagged wound situated in the right frontal region. The wound extended about three inches back from the brow and was about one and a half inches in width, the middle line of the head being about one and a half inches from the upper edge of the wound. Beneath this the skull was crushed in like the broken shell of an egg, making a depression in which two fingers could lie. On giving chloroform and enlarging the wound the fracture in the outer table of bone was seen to reach to the coronal suture, and the fracture of the inner table about half an inch to one inch beyond. The membranes were extensively torn, and the depressed part of the skull was driven into the brain especially in front. Owing to the extensive fracture of the inner table of the skull I had some difficulty in elevating, having to remove three circles of bone with the trephine. About two or three drachms of brain matter, over and above what had escaped before, were lost during the operation chiefly from the posterior end of the wound. The bone removed by the trephine was replaced and the wound was dressed. The patient remained in a semi-conscious condition for twelve days, and then steadily recovered. There was never any sign of meningitis, and no paralysis occurred with the exception of the left eyelid. Here ptosis appeared directly after the operation, and persisted for ten weeks. It was never absolute and gradually passed off. At the end of twelve weeks it had practically disappeared. I saw the boy occasionally during the next five months. The ptosis entirely disappeared, and so far as could be seen there were no permanent evil results from the extensive head injury from which he had suffered.

Noting the position of the fracture and its relation to the coronal suture it is seen that the posterior end of the fracture, from which the brain matter chiefly escaped during the operation, just about reaches the ascending frontal convolution, and that the level is that of the second (or middle) frontal convolution and the sulcus between the first and second convolutions. I believe that in this case the monolateral ptosis was the result of destruction of the cortical centre, probably during the elevation of the depressed bone, and that recovery was due to the function being assumed by the opposite side. I think that one may exclude the possibility of the ptosis being a nuclear paralysis because there was no ptosis to be observed sixteen hours after the accident and before the operation, but immediately after the operation ptosis was observed, which, however, did not increase in severity.

After weighing the evidence I think that the following conclusions are warranted:—1. There is a distinct cortical centre for the elevator of the upper eyelid. 2. This centre is situated in the posterior extremity of the second frontal convolution, extending probably into the first frontal convolution; that is, above and in front of that suggested by De Bono, and rather lower than the position assigned by Ferrier. 3. There is a definite relation between this centre and the levator palpebræ superioris of the opposite side, and destruction causes paralysis, temporary or permanent, of the lid on the opposite side. 4. This cortical centre is distinct from the cortical centre or centres for the other eye muscles; and therefore, as a result of a cortical lesion, ptosis may occur as a solitary paralysis; or on the other hand, in cortical paralysis of the muscles of the eye, the levator may alone escape. It is interesting to note that the blood-supply of this cortical area is double, it being supplied both by the anterior cerebral and the middle cerebral arteries, which may account for the rarity of ptosis from cerebral embolism.

Edinburgh.

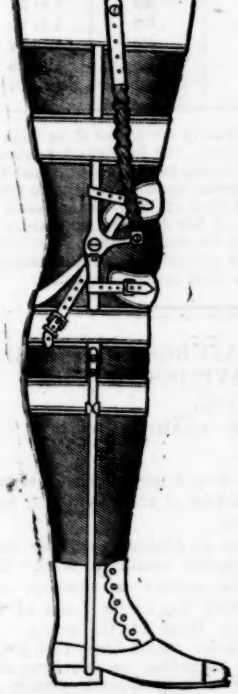
FRACTURE OF THE PATELLA.

BY HEATHER BIGG, F.R.C.S. EDIN.

THE immediate result of transverse fracture of the patella is that the tibia is more or less completely severed from its connexion with the extensor muscles of the thigh and the natural object of all treatment must therefore be to reunite this connexion between the two parts with as much strength and completeness as possible so that the powers of the knee joint may be restored to their fullest ability in walking. In the present days o advanced surgery this end is frequently attained by the actual operation of suturing the fragments together. But this is not always admissible and the alternative method of apposing the segments by external

means has to be adopted. My object is to show in what manner and by what apparatus not only may the closest junction be attained between the broken segments, but also how, by a graduated system of strain, the newly-laid material of junction may be cultivated into the greatest strength and endurance. Sir Astley Cooper in his "Treatise on Dislocations" lays down the proper laws of treatment in so clear a way that, although since his time the methods may have materially improved, the principles that underlie them remain classic and unchanged. "Confine" (he writes) "the leg quite straight with circular bandages above the knee for five or six weeks. Then a slight passive motion is to be begun and this must be done gently with much circumspection, that the ligament if not firmly united may not give way and the bones recede. If the union be found sufficiently firm to bear it then passive motion is to be employed from day to day until the flexion of the limb be complete. If passive motion be not used it appears that the action of the extensor muscles would never return." He goes on to write that after the passive motion has been duly used the patient should be placed on a high chair and directed to swing his leg in order to ensure under voluntary motion the gradual restoration of the powers of the muscle.

Now if the essentials of treatment be put into sequence they will be found to run as follow: (1) to approximate the fractured segments as completely as possible; (2) to maintain them in undisturbed apposition so that new material may be easily and reposedly laid down; (3) to submit this new material when formed to graduated strain in such a way as to provoke it to the greatest strength; (4) to passively and gradually renew the movements of the knee-joint from complete extension to complete flexion; and (5) to restore the extensor muscles of the thigh to active power and nutrition after their enforced atrophic quiescence. The way in which I have found all these essential conditions most perfectly satisfied is by an apparatus having the construction shown in the accompanying illustration. It consists of two lateral rods extending along each side of the leg; these are jointed at the knee and connected by four metal bands, two encircling the thigh and two the calf. A continuation of the rod on the outer side of the leg reaches to the sole of the foot where it fits into a socket in a bed-shoe if the patient is still recumbent, or a boot when the patient has started walking; this accessory rod is simply to localise the whole apparatus in a precise and fixed position on the leg. The rest of the special mechanism is at the knee. In the first place the joints of the lateral rods are "locked joints"—that is to say, they are made fixed and incapable of any movement at all when the instrument is first put on the extended and quiescent leg; but the lock is so arranged that it can by filing be cut away at will and flexion thereby be gradually introduced until at last the complete right-angle is reached. Next there are at the joints of the rods short levers to which are attached elastic "mock-muscles" with an extensor power fully equivalent to that of the quadriceps. Lastly, there are two semilunar pads for holding the segments of the patella. The lower pad is fastened to the lateral rods by transverse straps, its object being simply to hold the lower segment steady. The upper pad has two sets of straps, one set acting transversely so as to bring the pad directly home over its segment and the other set acting obliquely downwards in such a direction as to bring the upper segment down into apposition with the lower one.



The application of the apparatus is as follows:—At the outset, whilst the patient is still in bed, it is applied in perfect and rigid extension, and whilst the lower segment is steadied by its semilunar pad the upper segment is readily and without difficulty brought down and retained in proper apposition by its semilunar pad. When the new tissue of juncture between the segments is estimated (generally in about six weeks) to be sufficiently formed and to be capable of some incipient strain then the patient begins to walk with a stick, the instrument remaining rigid for a further week or so. Then the "locked joint" at the knee is released by amounts of about five degrees at a time every few days until the complete right angle of flexion is attained. All this while the extensor "mock muscles" are kept at their fullest tension, their object being to relieve the quadriceps of any work whatever. In every-day walking with the knee-joint mobile it is the quadriceps that flings the leg forward; the "mock muscles" of the apparatus do the same thing artificially and the quadriceps consequently has no need to come into action at all and therefore does not pull on the upper fragment of the patella, which is thus left undisturbed to follow its lower segment in apposition. When, however, flexion has been permitted to reach the right-angle then the "mock muscles" are loosened little by little and the quadriceps gradually begins to pull on the mended patella until it is allowed to do so in its full strength. Finally, the lower semilunar pad is removed whilst the upper one is slightly loosened but is left as a necessary safeguard for a few weeks longer after which the whole apparatus can be discarded.

The feature of this particular treatment is that not only are the segments safely held in apposition, but the reunited bone is submitted by controllable graduations to movement and to strain and the new tissue of union is thereby provoked into attaining perfect strength; for all tissues strengthen under graduated provocation and the fact is perhaps better illustrated in fractured patella than in any other instance. I have notes of close on 300 cases satisfactorily dealt with by this method and it may be added in conclusion that with some modifications of detail it is equally applicable to ruptured quadriceps and to ruptured ligamentum patellæ.

Wimpole-street, W.

REMARKS ON THE MORTALITY FROM CANCER.

BY W. ROGER WILLIAMS, F.R.C.S. ENG.

YEAR after year the Registrar-General's reports keep on repeating that the cancer death-rate is the "highest on record," and this has been going on continually for more than half a century. Yet, so far as I can see, no effect has been produced on the great mass of professional and lay opinion by these constantly reiterated warnings. We often hear of efforts being made to stay the progress of diseases like typhoid fever, small-pox, and tuberculosis—all of which are, and for many years have been, steadily declining; so that in the future we need only improve a little on what we have done in the past to ensure their eventual extinction. But with regard to cancer the case is very different, for the conditions of life are such that if no effort is made to check the progress of this disease it will ere long be as lethal as all the above-mentioned maladies combined. That this is no imaginative statement the subjoined table shows. Yet I have no hesitation in declaring my belief that there need be no more difficulty in mitigating the prevalence of cancer—and perhaps even in eventually extinguishing the disease altogether—than there is in the case of the maladies mentioned above. I believe that the tendency to cancer may be increased by unsuitable modes of living and *vice versâ*. We must therefore seek out those conditions which favour its development; and by avoiding them we shall be able to effect our object. In my opinion it is only by progress along such lines that the cure of cancer is ever likely to be effected.

In this connexion such influences as are comprised under the terms alimentation and domestication seem to

me to be of paramount importance. Probably no single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat which is such a characteristic feature of this age as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds till it has now reached the amazing total of 131 lb. per head per year, which is more than double what it was half a century ago when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors coöperate and among these I should be especially inclined to name deficient exercise and probably, also, deficiency in fresh vegetable food.

In 1840 cancer caused 2786 deaths, the proportion being 1 in 5646 of the total population and 1 in 129 of the total mortality, or 177 per million living. In 1896 the deaths due to it numbered 23,521, or 1 in 1306 of the total population and 1 in 22 of the total mortality, or 764 per million living. Thus the proportionate mortality from cancer now is four and a half times greater than it was half a century ago. In this respect its position is unique, for no other disease can show anything like such an immense increase.

In illustration of this subject I have compiled the following table:—

TABLE I.—*Showing the Prevalence of Cancer and its Increase in England and Wales since 1840.*

Year.	Total population.	Total deaths.	Cancer deaths.	Cancer death-rate per million living.	Proportion to population.	Proportion to total deaths.
1840	15,730,813	359,637	2,786	177	1 to 5,646	1 to 129
1850	17,773,324	368,995	4,966	279	1 to 3,579	1 to 74
1855	18,829,000	426,646	6,016	319	1 to 3,129	1 to 70
1860	19,902,713	422,721	6,827	343	1 to 2,915	1 to 62
1865	21,145,151	490,909	7,922	372	1 to 2,670	1 to 62
1870	22,501,316	515,329	9,530	424	1 to 2,361	1 to 54
1875	24,045,385	546,453	11,336	471	1 to 2,121	1 to 48
1880	25,714,288	528,624	13,210	502	1 to 1,946	1 to 40
1881	25,974,439	491,937	13,542	520	1 to 1,918	1 to 36
1882	26,413,861	516,664	14,067	532	1 to 1,879	1 to 36
1883	26,770,744	522,997	14,614	546	1 to 1,763	1 to 35
1884	27,132,449	530,828	15,192	559	1 to 1,786	1 to 35
1885	27,499,041	522,750	15,560	566	1 to 1,767	1 to 33
1886	27,870,586	537,276	16,243	583	1 to 1,715	1 to 33
1887	28,247,151	530,758	17,113	606	1 to 1,650	1 to 31
1888	28,628,804	510,971	17,506	610	1 to 1,635	1 to 29
1889	29,015,613	518,353	18,654	643	1 to 1,555	1 to 27
1890	28,762,287	562,248	19,433	676	1 to 1,480	1 to 28
1891	29,081,047	587,925	20,117	692	1 to 1,445	1 to 29
1892	29,405,054	559,684	20,353	690	1 to 1,445	1 to 27
1893	29,731,100	569,958	21,135	711	1 to 1,407	1 to 27
1894	30,060,763	498,827	21,422	713	1 to 1,403	1 to 23
1896	30,383,047	568,997	22,945	756	1 to 1,324	1 to 24
1896	30,717,356	526,722	23,521	764	1 to 1,306	1 to 22

Mere increase of population will not account for this continuously progressive augmentation of the cancer death-rate, as is evident from the fact that its rate of increase has proportionally been much in excess of this, and there is far too much uniformity in the variations of the increments of increase in the long succession of years to warrant its being ascribed to improved diagnosis or other casual error. Moreover, I have ascertained that the increase has not been confined to one or a few parts of the body, but that it has involved them all—on the whole without any considerable disturbance of the normal proportionate localisation ratios.

The attempt to explain the increasing cancer mortality as due to the average age of the population having advanced and the consequent liability to greater numbers of cases of cancer will not bear critical examination, for the saving of life in modern times has been mainly confined to early years. The death-rates of males over thirty-five years and of females over forty-five years have either remained stationary or increased, while the number of those who attain old age has decreased. This heavy mortality at post-meridian ages is no doubt largely due to the survival in augmented numbers of weakly lives artificially prolonged by improved conditions of existence, but not more than a small fraction of the increased cancer mortality can be thus accounted for. Besides, it is a mistake to assume that increased cancer mortality is a necessary corollary of the survival of augmented numbers to the cancer age; for instance, the average age of the population of Ireland is much higher than that of the population of either England or Scotland, owing to the large number of elderly people left behind after the younger ones have emigrated, yet the cancer mortality of Ireland is much less than that of either England or Scotland. In most civilised countries where statistical records have been kept similar increases, although less pronounced, have been observed.

A remarkable fact about the increasing cancer mortality is that it has affected males to a much greater extent than females. The following table illustrates this.

TABLE II.—*Showing the Relative Increase of Cancer among Males and Females.*

Period.	Cancer death-rate.		Sex ratio.
	Male.	Female.	
1851-60	195	434	1 to 2·2
1861-70	244	523	1 to 2·1
1871-80	315	622	1 to 1·9
1881-90	430	739	1 to 1·7
1891-95	47	868	1 to 1·6
1896	618	901	1 to 1·4

Thus while the cancer mortality for males from 1851 to 1890 has increased 167 per cent., the increase for females has been but 91 per cent. It seems to me probable that this undue incidence of the increasing cancer mortality in males may be ascribed to the fact that of late, as the result of urbanisation, the conditions of life for men have come to resemble more closely those for women than heretofore. Excess of food, with want of proper exercise and changed surroundings, are, I think, its chief causative agents.

Clifton.

SOME NEW FEATURES OF THE ACCESSORY CAVITIES OF THE NOSE.

BY ROBERT H. CRAIG, M.D.

IN the following notes I have briefly indicated certain features of the accessory cavities of the nose which have hitherto not received attention.

The growth of the antrum of Highmore depends upon the development of the superior maxillary bone. The deeper the canine fossa the smaller the antrum, and it is interesting to note that the canine fossæ of the white race are smaller than those of the negro. As a rule, elderly people have deeper canine fossæ than young adults and individuals with projecting canines have also deep fossæ. The size of the cavity depends greatly on the thickness of the walls. Large cavities have thin walls; on the other hand, the walls of a small antrum are always thick, the difference in size depending upon the amount of absorption during development. These anatomical facts have a special clinical bearing, for in inflammation of the mucous membrane of a large cavity with thin walls the inflammatory products press more closely on the branches of the trigeminus and this accounts for the frequent symptoms of referred pain in such cases. The antrum is often divided into two or more

parts by bony partitions, as shown by Zuckerkandl's sections. According to the teachings of Tandler the dimensions of the cavity may be obtained by the three following external measurements: (1) *the height* from the infra-orbital floor to the alveolar process; (2) *the breadth* from the pyriform aperture to the zygomatic process, deducting from 1 to 2 millimetres to allow for tissue; and (3) *the depth* from the external angular process to the level of the upper part of the canine fossa. The normal opening of the maxillary antrum is situated in the posterior part of the hiatus semilunaris under the anterior end of the middle turbinated bone. According to Chiari, Hajek, and other authorities an accessory opening is found in every fifth case in the middle meatus posterior to and deeper than the normal aperture.

The frontal cavity.—The size of the cavity is inconstant; its upper limit is judged by the height of the superciliary ridge, the lower by the incisura orbitalis or fronto-maxillary suture; its outer boundary by a line drawn downwards from the supra-orbital notch. The opening of the cavity is situated in its most dependent part and leads into the naso-frontal duct.

The ethmoidal labyrinth.—According to the teaching of Hajek this is developed from four basal plates (sometimes one or more supernumerary plates are found between the middle and superior turbinal). The plates are: (1) the unciform; (2) the bulla; (3) the middle turbinated; and (4) the superior turbinated. Most of the anomalies which are so frequently found in connexion with this cavity are caused by variations in the evolution of these plates. Between the first and imperfectly developed unciform process and the bulla is the hiatus semilunaris, between the second and third plates the anterior ethmoidal cells are situated, between the third and fourth the middle ethmoidal cells are found, and behind the fourth plate the posterior cells. According to the latest views the relation of the anterior ethmoidal cells to the infundibulum is as follows. The cells are usually found only posterior to the hiatus semilunaris, but in some cases the whole hiatus is enveloped in the anterior labyrinth—a fact of great surgical importance. The fissures between the plates are known as inter-turbinal ways and every inter-turbinal way may have appendages supplied with ducts. Thus the hiatus semilunaris is to be regarded as an inter-turbinal way and the cells which lead from it as infundibular cells. Each ethmoidal cell usually communicates with the fissure with which it is connected and if the cells do not open directly into their respective fissures they open into other cells which do open direct; for example, if there are five cells in the anterior part of the labyrinth and only two open into one of the fissures the other three communicate with the two which open direct.

The relationship of the ethmoidal cells to the frontal cavity.—It is found that the plate of the bulla ethmoidalis separates the frontal cavity from the ethmoidal labyrinth and the size of the former cavity is more or less dependent upon the position of the bulla. Hajek's prefrontal cavity is placed between the anterior ethmoidal plate and the frontal sinus and is caused by a backward deviation of the plate of the bulla. The bulla is subject to anomalies, thus: 1. In some cases the bulla does not reach as high as the criboriform plate and the frontal cavity communicates with the anterior ethmoidal cells. 2. The median plate of the bulla may be defective and the whole anterior ethmoidal labyrinth then communicates with the frontal sinus. An ethmoidal cell is often found in the anterior end of the middle turbinal but this must not be regarded as an anomaly for it is only isolated from the rest of the labyrinth as described by P. Heymann. The duct of this cell frequently becomes occluded and gives rise to a prominent swelling on the anterior end of the middle turbinal. The most constant opening of the anterior ethmoidal cells is situated between the bulla and the anterior insertion of the middle turbinated bone, that of the middle farther back, behind and above the bulla, while the posterior opening is in the recessus spheno-ethmoidalis.

The sphenoidal cavity.—The size of the cavity is inconstant and its lateral walls are sometimes defective owing to an osteo-porosis. In such cases mucous membrane alone separates the cavity from the meninges. The size of the opening varies, but it is always situated in the anterior wall, the distance of the aperture from the anterior nasal spine being about from 8½ to 9 centimetres in the male and from 7½ to 8 centimetres in the female.

Montreal.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

MIDDLESEX HOSPITAL.

A CASE OF IMPERFORATE HYMEN; RETAINED MENSES; HÆMATOCELE; OPERATION; RECOVERY.

(Under the care of Dr. PASTEUR and Mr. ANDREW CLARK.)

IN different cases of imperforate hymen different portions of the genital canal may be dilated; in the vast majority of the cases the uterus is much distended; in others the Fallopian tubes, and in others again the vagina is the part most affected. When the uterus is dilated the tubes are often enlarged also, and this accounts for the regurgitation along them of the menstrual fluid which is very liable to occur. It is very rarely that abdominal section is required for retained menses, and very few cases are on record. Alexandroff[1] recommends that laparotomy should be performed if dilatation of the Fallopian tubes is diagnosed, and especially if one of the tubes has ruptured. A case in many respects similar to the one recorded below was reported by Webster.[2] It was found necessary to remove the distended left tube, but unfortunately the patient died six weeks later from septic peritonitis. In cases of imperforate hymen it cannot be rare for the retained blood to pass backwards into the peritoneal cavity and it is probable that in most cases no very serious results follow, though it is possible that the pelvic hæmatocele resulting may give rise to peritoneal adhesions, but when the hymen has been incised an easy passage is left for the entrance of septic organisms and then the effused blood will greatly facilitate their development.

A girl, aged fifteen years, well nourished but anæmic, was admitted into the Middlesex Hospital on April 27th of the present year under the care of Dr. Pasteur on account of abdominal pain and swelling. She had had a similar attack but not so severe about a year previously which cleared up after a few days' rest in bed, but beyond this she had always enjoyed excellent health and did not remember having been laid up, except with scarlet fever in 1896, from which she recovered perfectly. She had never menstruated nor had she had any indication of the commencement of that function. The present illness began with severe headache on April 23rd—that is, four days before her admission to the hospital. She passed a very restless night and had cramps in her abdomen and legs. On the next day she had pains in her back and the lower part of her abdomen and lost her appetite. The pain in her back got better, but that in the abdomen got so much worse that her mother took her to the hospital. The bowels had been regular. On admission her organs were normal. The pulse was 108 and the temperature was 100·2° F. She complained only of pain in the abdomen and the following is the note of its condition: "There is no uniform distension of the abdomen, but between the umbilicus and the right iliac crest there is a marked swelling with its edges more or less well defined and with a surface area about four inches across. It is resistant on palpation, dull on percussion and intensely tender." The condition of the patient on the next day was much the same; she had not been sick, her bowels had not been opened, she had no appetite, and her tongue was coated. The pulse was 100 and the temperature was 99° at 6 A.M. and 99·8° at midday. The abdomen was decidedly more tender, especially at the outer part of the swelling and by rectal examination a tumour could be felt pressing on the bowel. The next day the condition was practically the same. The temperature on the previous night had been 100·4° and the patient had been and still was very

[1] Nouvelles Archives d'Obstétrique et de Gynécologie. Paris August 25th, 1896.
[2] American Journal of Obstetrics, September, 1895.

restless. Though the symptoms were not altogether those of appendicitis this was believed to be what she was suffering from and it was thought that an operation was desirable. Accordingly about 4 o'clock on the 29th the patient was anæsthetised, gas and ether being employed, and an incision was made over the most tender part of the tumour, which happened to be the usual spot chosen for appendectomy. On opening the peritoneal cavity a large quantity of dark-coloured fluid and clotted blood escaped from the wound. The finger was introduced and a soft tumour of about the size of a fœtal head was felt. This was drawn out of the wound and proved to be an enlarged ovary and Fallopian tube. The fimbriated extremity of the latter was congested and patulous and dark-coloured blood was issuing from it. Further manipulation showed that the uterus was much enlarged and that the left Fallopian tube was also much distended and the ovary considerably above the natural size. The vulval orifice was now examined and it was found to be closed, so the abdominal wound having been carefully covered the patient was put in the lithotomy position in order that the condition of the vagina could be properly made out, and it was found to be simply a case of imperforate hymen not bulging forward as usual in the least. An incision was made into it and a quantity of dark fluid blood escaped. This was found to have distended the vagina laterally as well as the uterine cavity. These were irrigated with a perchloride of mercury solution and a cyanide gauze plug was loosely introduced. The patient was then returned to the original position, the abdominal wound was sponged dry, the wall was sewn up with fine silk, layer by layer, a cyanide gauze dressing was applied, and the patient was returned to bed. Hot vaginal douches were ordered to be made every four hours and in the intervals the vagina was to be kept loosely plugged with iodoform gauze. On the next day the patient appeared to be comfortable and was in no pain. The only things to note were that the temperature was 100·2° and the pulse was 120, and the night temperature and pulse remained at this till the fourth day after the operation, when they came down to 99·2° and 102 respectively, below which they rarely went while the patient was in the hospital. The dressings were taken off on May 6th, when, the wound being quite closed, the stitches were removed and a collodion dressing was put on. There is nothing else to note about the case, there was no cause for any anxiety, and the difficulty was to keep the girl in bed. She was not, however, allowed to get up until the 27th, a month after the operation, and was sent to the convalescent home on June 2nd. She was again seen on her return from the convalescent home on the 27th and expressed herself as being quite well, but there had been no sign of another period. A vaginal examination was made with the patient under the influence of an anæsthetic and the aperture in the hymen, much thickened and very dense, was dilated. The pelvic organs were normal.

Remarks by Mr. ANDREW CLARK.—There are two points about the above case which induce me to put it on record. The first point is the rarity of the condition. An imperforate hymen is comparatively common, but in the majority of instances it shows itself by protrusion of the membrane from the vulva, the swelling getting larger and larger with each menstrual period, dilating the vagina to an enormous extent and pushing the uterus up into the abdomen. Sometimes the uterus becomes distended also, as happened in a slight degree in this case, but here, in addition to the distended vagina and uterus, there were dilatation of the right Fallopian tube and a back flow of the fluid into the peritoneal cavity, a hæmatocele forming there. This was probably due to the thickness and absence of elasticity in the hymen. The other point is the error in the diagnosis of the condition. I must confess that the idea of an imperforate hymen being the cause of the trouble never entered my head until I saw the blood, and though the history was perhaps not altogether typical of appendix abscess, still the one previous attack, the position of the swelling and its extreme tenderness, together with the age and appearance of the patient, and the absence of any history of monthly trouble, would, I venture to think, suggest to few surgeons the propriety of a vaginal examination, a rectal examination having already been made. Then, again, the importance of early operation and its practical safety and the risk attendant on the presence of a localised collection of pus in such a position make one resort to operation with little hesitation, for if there is a class of case in which the surgeon should act on the principle of "when in doubt, operate," it is that of appendix abscess. Had I looked at the vulva first no doubt I should have been contented with making a free opening through the hymen, but as the case has turned out I think that what was done was best, for I doubt if the quantity of effused blood would have been absorbed anything like so quickly, and I do not think that the girl would have been convalescent and able to enjoy life again in so short a time as two months.

LEEDS GENERAL INFIRMARY.

A CASE OF INTUSSUSCEPTION; OPERATION; RECOVERY.

(Under the care of Mr. W. H. BROWN.)

WE have pointed out on several recent occasions in commenting on cases of intussusception that the tendency during the last two or three years has been to operate at an earlier period than formerly. At one time inflation or injection always preceded laparotomy, and the necessary shock of the operation often proved fatal to the child already much exhausted by the unsuccessful preliminary attempts. The statistics of these cases of "secondary" laparotomy are perfectly useless for estimating the value of operation in intussusception, but with the recent increase in the proportion of cases treated at once by laparotomy the percentage of recoveries has increased. It would be very desirable if all cases of intussusception treated by operation could be recorded and then the statistics would be of more value than at present. It cannot be too much insisted on that in a large proportion of the cases of this disease no inflation or injection could reduce the intussuscepted bowel. Mr Brown's case reported below is a good instance of this; the grasp of the ensheathing layer of bowel was so tight that even reduction by manipulation was difficult. In such cases as these inflation can only do harm and operation holds out the sole hope of a successful result. For the notes of the case we are indebted to Mr. E. J. A. Dodd, house surgeon.

A boy, aged three years, was admitted into the Leeds General Infirmary on March 31st, 1898, suffering from pain in the abdomen and tenesmus. The patient had been quite well until two days before admission, when he was seized with pain in the abdomen. He had vomited on several occasions and had passed blood *per rectum*. On admission the abdomen was found to be slightly distended and on palpation an elongated swelling could be felt in the region of the ascending and transverse colon. There was some tenderness of the abdomen. The child was in fairly good condition, the pulse was rapid but good, and as before admission attempts at reduction by means of injections had been made an operation was decided upon.

A couple of hours after the admission of the patient ether was administered and the abdomen was opened in the middle line below the umbilicus by an incision 4 in. long. On putting the hand into the abdomen an intussusception was found extending from the cæcum to the splenic flexure of the colon. The apex of the intussusception at the splenic flexure was then brought outside the abdomen and by means of gentle pressure with the finger and thumb the greater part of it was easily reduced, the bowel being returned to the abdomen. The intussusception in the last few inches was found to be folded upon itself in its longitudinal axis and had the appearance of a double intussusception. The bowel was brought further out of the abdomen and was with difficulty reduced by means of manipulation. This portion of the bowel was found to be very much swollen, especially where the two surfaces had been in contact, and was very much inflamed, but the serous coat had not lost its lustre. The wound was then washed over with carbolic lotion, the abdomen was closed, and a dry dressing was applied. The after treatment was simple. A small dose of nepenthe was given on the night after the operation, but it was not repeated. The wound was dressed on the seventh day and healed by the first intention. The bowels were opened on the sixth day by a simple enema and were subsequently kept open by small doses of castor oil. The patient was discharged on April 30th. He was seen two months later and was then quite well.

Remarks by Mr. BROWN.—In a recent number of THE LANCET there appeared notes of two cases of

intussusception treated by early operation; as the details were very similar I venture to add the above case to the scanty records of successes. If more evidence in favour of early operation be needful I venture to think it would be forthcoming if surgeons were less reticent in publishing isolated cases. The condition of the bowel at the initial point of invagination showed that a few hours' more delay would have resulted in sloughing, for the swollen patches which were in contact were very suggestive of destructive pressure. I have only once seen an intussusception undergo spontaneous cure and this after weeks of great suffering. Unfortunately operation is resorted to only after a prolonged trial of palliative measures has failed. I think it would be a good rule to regard cases of intussusception in the light of strangulated herniæ and treat accordingly. If the risk of abdominal section is great the risk of leaving invaginated bowel is greater. I have on many occasions had to operate only to find sloughing intestine, and then the necessary manipulations, either to restore the continuity of the canal or the formation of the artificial anus, call for a prolongation of the operation which is rarely compatible with life.

Reviews and Notices of Books.

Anatomical Atlas of Obstetric Diagnosis and Treatment. By OSCAR SCHAEFFER, M.D. With 145 Illustrations. London: Baillière, Tindall and Cox. 1897. Crown 8vo. Pp. 230. Price 12*s.* 6*d.*

Atlas and Essentials of Gynecology. By OSCAR SCHAEFFER, M.D. With 64 Plates and 54 Woodcuts. London: Baillière, Tindall and Cox. 1897. Crown 8vo. Pp. 288. Price 15*s.*

IT may well be a matter for discussion whether an author is wise in attempting to combine an atlas with a text-book as has been done in these two books. One or other part must inevitably suffer and, although Dr. Schaeffer might perhaps say that his letter-press is mainly secondary to the plates, yet since he has given us more than a mere description of the plates we must regard the second part of these two works as of the nature of a text-book.

The "Anatomical Atlas of Obstetric Diagnosis and Treatment" consists of two parts. The first part is composed of some 145 figures, a large number coloured, illustrating anatomical conditions in connexion with pregnancy, types of various forms of contracted pelvis, and some of the pathological complications of pregnancy and labour. The drawings are of very unequal merit and interest and are very largely taken from preparations in the Munich Gynæcological Clinic, with which the author was for some time connected. They give a clear idea of the conditions which they are intended to represent, but cannot be regarded from the artistic point of view as wholly successful, nor indeed are they all strictly accurate. Fig. 110, Tamponade of the Bleeding Uterus, after Dührssen, would give a student an entirely erroneous impression as to how to plug a uterus for post-partum hæmorrhage. The most essential feature in the operation is to plug the uterus from above down, and great care should be taken to plug the upper part of the uterine cavity. In the figure mentioned—described as an original drawing after Dührssen's direction—the tampon is shown filling only the lower half of the uterine cavity, leaving the upper half entirely empty. A reference to Dührssen's own description of the operation in his "Geburtshülfliches Vademecum" will show that he particularly directs that the tampon should be carried up to the fundus of the uterus and that the uterine cavity should be completely packed from above down. The illustrations of contracted pelvis, of which there is a very complete series, would have been of much greater value had they all been drawn to scale. Fig. 107, representing a rupture of the fundus of the uterus from the Munich Clinic, is of very great interest, although, unfortunately, no history is available. The second half of the book consists mainly of a description of the conditions which are illustrated by the plates. Occupying as it does only about 180 pages it is of necessity very greatly condensed. For this reason some of the paragraphs on treatment can hardly be regarded as a safe guide to the student. As an illustration of this we may turn to the section giving the treatment of a case of accidental hæmorrhage. This is summarised as follows: "If the cervical canal is somewhat dilated, rapid delivery, perhaps by accouchement force, or by Cæsarean section in atony of the uterus after failure of hot injections, tamponade, and ergotin," no mention being made of rupture of the membranes and no details being given as to what is the correct treatment if the cervical canal be not somewhat dilated.

The "Atlas and Essentials of Gynecology" also consists of two parts, the first half of the book being made up of some 170 coloured illustrations, and the second half of letter-press further illustrated by woodcuts. The plates illustrating diseases of the external genitalia and of the cervix uteri are of considerable value and they are supplemented by drawings of some of the microscopical appearances met with in the various conditions figured. There is a large number of schematic diagrams illustrating the various displacements of the uterus and the methods of replacement, and these, no doubt, would be of value from a teaching point of view. Carcinoma of the cervix and of the body of the uterus is illustrated by a number of original water-colour drawings after von Winckel and from preparations in the Munich Clinic. The second half of the book consists of 5 parts; the first is concerned with Malformations and Arrests of Development, the second with Changes in Shape and Position of the Pelvic Organs, the third with Inflammation, the fourth with Injuries, and the fifth with Neoplasms. This portion of the work will be useful in helping the student to recall the most important facts connected with gynæcology, but it cannot be considered as complete, and like the second part of the Atlas of Obstetrics it suffers from the amount of condensation which has been found necessary.

These two books do great credit to Dr. Schaeffer's industry and observation, but at the same time we cannot but think that the result would have been of much greater value had the author been content to bring out either a pure atlas or a pure text-book, since in their present form the works are not so complete or useful as they might have been.

De l'Exploration externe en Obstétrique. (*External Examination in Obstetrics.*) Par Professor A. PINARD. Paris: G. Steinheil. 1897.

TEACHERS of obstetric medicine in this country have not been slow to appreciate the great value of abdominal palpation in the practice of midwifery, but in spite of this fact it is still a difficult matter to get students to recognise its great importance and to persuade them to bestow upon it the amount of practice necessary to enable them to acquire any degree of proficiency in its performance. This paper of Professor Pinard, read before the International Medical Congress held at Moscow in 1897, is an authoritative statement as to the possibilities and limitations of abdominal palpation and may be read by all engaged in midwifery practice with the greatest profit. It is not possible for all to become so expert as the author, but he very clearly states what may and what may not be felt if students will but bestow upon this valuable method of examination the requisite amount of practice. In considering the diagnosis by the abdomen of the existence of pregnancy and of its age Professor Pinard calls attention to the fact that after the third month of pregnancy the uterus is more an abdominal than a pelvic organ. With regard to the

size of the uterus at the various months of pregnancy he states most explicitly that he has never seen a uterus the fundus of which did not reach above the umbilicus at the fifth month — this we would commend to the attention of some of the authors of English text-books of midwifery, in which the most erroneous statements are to be found as to the height of the fundus of the uterus at the various months of pregnancy. Professor Pinard points out that not only can normal pregnancy be determined by abdominal examination, but also that most of the complications of pregnancy, such as the presence of tumours, hydramnios, hydrocephalus, or hydatidiform mole, can only be diagnosed by this method of examination in the majority of cases. In the same way it is possible to diagnose most cases of multiple pregnancy and of death of the fœtus and to determine the relation between the size of the child's head and the size of the pelvis. He also shows the value of this method in confirming the diagnosis of extra-uterine gestation, but he does not believe that the position of the placenta *in utero* can be determined in any but a very small percentage of cases. During labour abdominal palpation must yield in importance to vaginal examination, and since the diagnosis of prolapse of the cord, of tumours of the pelvis, and of the necessity for rupture of the membranes cannot be determined by the abdomen vaginal examination can never be entirely dispensed with. Appended to the paper are notes of cases of multiple pregnancies, hydramnios, hydrocephalus, &c., in which abdominal examination enabled a correct diagnosis to be made.

LIBRARY TABLE.

Physiologie. Travaux du Laboratoire de M. CHARLES RICHET. Tome iv. Appareils Glandulaires; Nerfs et Muscles; Séro-thérapie; Chloroforme. Avec 57 figures dans le texte. Paris: Félix Alcan. 1898. Price 12 francs.—This volume, which is the fourth of the series, contains fifteen memoirs of which the authors are MM. C. Richet, P. Langlois, C. Beretta, Jotey-Ko, A. Chassevant, J. Héricourt, Saint Hilaire, André Broca, Carvallo, Pachon, Bardier, Athanasiu, and E. Vidal. These articles deal with various subjects of current interest and we propose to supply our readers with an abstract of the more important.

Sir Thomas Browne and his Religio Medici: an Appreciation. By ALEXANDER WHYTE, D.D. London and Edinburgh: Oliphant, Anderson and Ferrier. 1898. Price 2*s.*—The dedication of this little book sufficiently explains its scope and the occasion of its being written. "Dedicated to Sir Thomas Grainger Stewart, President of the British Medical Association, at whose request this appreciation was delivered as the Inaugural Discourse at the opening meeting of the Association in St. Giles's Cathedral on the 26th July, 1898, in great good-will and love by Alexander Whyte." Dr. Whyte thinks the Religio Medici to be Browne's best book, and that the others rank according to their affinity or otherwise with it. It is certainly the most important of his works and the one in which we hear most of the man himself, but to some minds there is a nameless, indefinable charm about the Urn Burial greater than anything in the Religio Medici. Dr. Whyte gives us a just and worthy appreciation of the noble character of Sir Thomas Browne.

Egyptian (Arabic) Self-taught. By C. A. THIMM, F.R.G.S. Second edition. London: E. Marlborough and Co. 1898. Pp. 70. Price 2*s.*—The principal feature of this little book is a very copious vocabulary of words and phrases requisite for travellers in Egypt and the fact of its being now in the second edition shows that it supplies a want. The Egyptian equivalents of the English words are expressed phonetically in ordinary English characters and not in Arabic letters, an arrangement which spares learners the perplexity of reading Arabic characters from right to left. A vocabulary, to be useful, must always give the English pronunciation, for Arabic words are usually written without vowels, as is done in English shorthand; but those who have mastered the alphabet are often helped by having the Arabic characters as well as the pronunciation, an arrangement adopted to some extent in the companion volume, "Arabic Self-taught," published by Messrs. Marlborough.

Annual Report on Meteorological Observations in the Straits Settlements for the Year 1897. By MAX F. SIMON, M.D., Principal Civil Medical Officer. Singapore: The Government Printing Office. 1898. — The greater part of this report consists of 71 pages of tabulated observations made at Singapore, Penang, Province Wellesley, and Malacca. For Singapore the figures show that the barometric extremes were 30·079 in. and 29·739 in., the mean height for the year being 29·89 in. The extremes of air temperature (Fahrenheit) were 92° and 69°, the mean for the year being 80°. The extremes of atmospheric humidity were 98 per cent. and 52 per cent., the mean for the year being 80 per cent. At the Kandang Kerbau Hospital Observatory the total rainfall was 103 in.; the greatest fall in twenty-four hours was 4·93 in. on Feb. 17th.

Bacillus Graminearum. By Dr. GIOVANNI MONTANO. Melfi: Giuseppe Grieco. 1898. Pp. 20.—In some parts of Southern Italy it is well known to the peasantry that if certain kinds of reed are cut, piled up, and left for a time, the opening or removal of these heaps generally causes great irritation of the skin of the workers. Dr. Giovanni Montano, of Lavello, an inland place about fifteen miles from Naples, has studied this subject and has published his results in the present pamphlet as well as in some previous treatises. The reeds in question are Arundo donax, Phragmitis vulgaris, and Calamogrostis epigeyos. When they are piled together until they become mouldy and dry there is an abundant production of a whitish-pink, very fine powder, consisting of spores and filaments of various species of hyphomycetes and schizomycetes, together with numerous spores of dendrochium microsorum containing colonies of a bacillus 5–6 μ in length and 1–2 μ in breadth, which Dr. Montano has called bacillus graminearum. The ill effects produced by these reeds are a violent smarting of the skin, which may even be described as an intolerable burning, cutaneous œdema, and eruption of papules, vesicles, pustules, and bullæ. The lymphatic glands, chiefly those of the neck and groins, are enlarged, the air passages may be seriously involved, and the temperature may reach from 38° to 40° C. (from 100·4° to 104° F.). The symptoms pass off entirely in from six to eighteen days. The same bacillus as that which was found in the powder on the reeds was to be seen in the contents of the vesicles on the skin of the patients.

Rhodes's Steamship Guide. Edited by THOMAS RHODES. London: George Philip and Son. Price 5*s.*—To all those who go "down to the sea in ships" much useful information is available in this book, which is well illustrated with maps, pictures of the better known "ocean greyhounds," portraits of the heads of the leading steamship companies, and coloured plates showing the flags of the various liners, code signals, &c. In addition there is an alphabetical directory of passenger steamers, giving interesting details concerning each; and also a well-written account in non-technical language of the marine steam-engine, placing the uninitiated in possession of some solid facts and figures. We learn, for instance, that a steamer using from 28,000 to 30,000 horse-power converts about half a million pints of water into steam every hour and that only 6 or 7 per cent. of the heat energy of the coal consumed is utilised in the actual forward movement of the ship. There

is much that is valuable alike to the traveller, the merchant, and the exporter, and in calling his book the "Bradshaw of the Ocean" the editor is probably not claiming too much.

My Home, and Household Companion. By J. W. JARVIS and W. J. WOODS. London: Simpkin, Marshall and Co., Stationers' Hall Court, E.C. Price 2*s.* paper cover; 3*s.* limp cloth.—There are probably but very few householders who have any reliable idea of the value of their home. When the question of insurance against fire arises some sum is usually guessed at, and, thanks to the infrequency of the event itself, the public generally are satisfied with their haphazard calculations. But when the unlooked-for calamity arises and an inventory of the goods destroyed has to be provided to satisfy the requirements of the fire insurance companies, then the average householder, after laboriously compiling a list of his household furniture, &c. (in which he is tolerably certain to have omitted not a few items), is generally confronted with the fact that the total of his loss exceeds his insurance, and he expresses his surprise that his home was worth so much. "My Home, and Household Companion" is just the book to put these matters right, and it consists of a number of pages ruled off ready for filling in, showing the cost, the date at which acquired, &c., of the goods in each room in the house, not the least valuable part of the book being the detailed inventory of the articles in the various rooms, passages, &c., and the systematic manner in which they are treated. There are, in addition, some useful notes on fire, burglary, life, and accident, insurances, and on wills and death in the house, each containing something which is not generally known. For instance, with regard to fire insurance it appears that, unless specially detailed in the policy or included in a general covering clause, the property of a servant is not replaced when loss occurs under the policy held by the head of the family. Another item not generally known is that when a loss is paid by an insurance company the amount is deducted from the sum insured until the renewal premium is paid or a new insurance equal to the amount of the loss paid has been effected. That is to say, if A, who is insured for £500, has a fire in May, and recovers £400, and the renewal premium on his policy is due the following December, during the period from May to December he is covered for £100 only, unless he re-insures. Mr. Jarvis's and Mr. Woods's book should be of help to the majority of householders; and if, at some future time, they could add to it, or issue in a separate form, some hints on what to do, and what not to do, when some of the usual domestic inflictions occur—when, for instance, the electric light suddenly goes out and no mechanic is at hand to put in a simple fuse-wire; or when there is a smell of gas in the kitchen for the want of half-a-pint of water poured into the telescopic pendant; or when the house is being flooded with water through a burst pipe for want of screwing down the cock on the main supply pipe, or, if that be missing, flattening the pipe itself with a hammer; or when the householder is told by the domestic that the "telephone man" or "inspector of water fittings," whom she admitted half-an-hour previously and permitted to roam over the house without so much as having a shadow of doubt as to the *bona fides* of his errand, has walked off with one or more valuable articles,—well, if they can add a few chapters on similar points to these to enlighten ourselves and to teach our domestics wisdom, they will earn the gratitude of a large number of their fellow men.

JOURNALS.

The Middlesex Hospital Journal.—The *Middlesex Hospital Journal*, which is edited by Dr. Campbell Thomson and Mr. C. Reissmann, has devoted its July number almost entirely to historical matters connected with the hospital and school. The "Story of the Middlesex Hospital" is very ably told by Dr. Sidney Coupland in a manner which cannot fail to interest everyone who reads it. "The story" is to be continued in the future numbers of the *Journal*, and when finished it will form a valuable record of the history of the hospital from the time of its foundation to the present day. Dr. Coupland deserves the best thanks of Middlesex Hospital men for the labour and time which he must have spent in giving them such an interesting and authentic account of their hospital. Mr. Stephen Paget contributes a good article on Sir Charles Bell, which deals more especially with his early life in London—"the time of waiting before his prosperity became well-nigh burdensome to him." The account of the new cancer wing and the illustrations of the new school buildings show that the future, like the past, is to be one of continual progress, for the new school buildings, which are now almost finished, will put the hospital in possession of an admirably organised medical school. The illustrations are numerous and include an excellent picture of Sir Charles Bell and the hospital staff in 1865, and various views of the hospital at different stages of its career. The *Journal* is well got up and we wish it success.

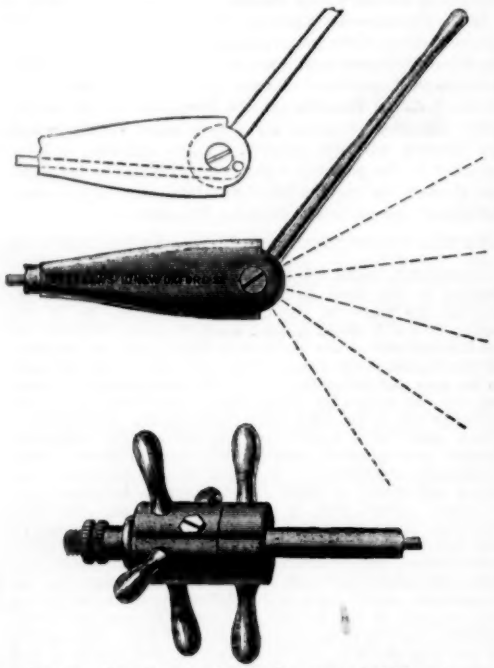
In the *Phonographic Record* for August, Dr. Fletcher Beach continues his descriptions of mentally deficient children, and Dr. James Collier narrates a remarkable case of vesical fistula in a paraplegic patient under the care of Sir W. R. Gowers at the National Hospital for the Paralysed and Epileptic. After retention of urine for five months, during which the bladder was not relieved by the catheter, a lump appeared in the patient's right groin, burst in a few days, and through the opening left the patient voids all his urine nothing coming *per urethram* but a little pus.

PRESENTATIONS TO MEDICAL MEN.—At a public meeting at the Drill Hall, Llandovery, on July 30th, his worship the Mayor of the Borough presiding, Mr. F. W. Lewis, M.R.C.S. Eng., L.S.A., medical officer of health of the borough and of the Llandovery Union, was the recipient of several gifts in recognition of his twenty-five years' services to the poor and rich alike. Over 800 persons subscribed and but for the collecting books being closed too soon more subscriptions would have been forthcoming. Nevertheless, about £250 were collected. The testimonial comprised chased and pierced fruit dishes, two pairs of silver Corinthian candlesticks, a silver fluted Georgian tea-kettle and stand, a silver fluted Georgian hot-water jug, a grand piano, and a secretaire in dark oak with revolving chair to match. On the kettle was engraved the following inscription: "Presented with four silver fruit dishes, two pairs of candlesticks, hot-water jug, desk, and chair to Dr. F. W. Lewis, Llandovery, by the inhabitants of the town and neighbourhood, as well as by the employés of the London and North-Western and Great Western Railway companies, as a mark of their appreciation of his long services amongst the poor and needy of the district and his unfailing courtesy to those amongst whom he lives. July 30th, 1898."—To mark the completion of some twenty-five years' practice in the Kintore district the friends of Mr. John Cameron, L.R.C.S. Edin., availed themselves of the opportunity to express in some tangible form an appreciative estimation of his services, both professionally and socially. The Oddfellows Society, with which Mr. Cameron has been associated as medical officer, took the initiative and opened a subscription list. A considerable sum was collected and on July 27th, at the public hall, Mr. Cameron was presented with a silver tea and coffee service. — At the meeting of the Committee of Visitors of the Joint Counties Asylum of Carmarthen, held on July 28th, the chairman (Mr. W. O. Brigstocke), on behalf of the committee, presented to Mr. Edwin Goodall, M.D., B.S., M.R.C.P. Lond., the medical superintendent, a silver teapot, cream jug, and sugar basin as a mark of their respect and esteem on the occasion of his recent marriage.

New Inventions.

A NEW PATTERN OF UTERINE REPLACER.

THE instrument figured below was the outcome of difficulties occasioned by a case of uterine displacement caused some months previously by a severe fall which occurred abroad in a place some three or four weeks' journey removed from the help of any instrument maker. The patient, a married nullipara, had cessation of the menses without any symptoms pointing to pregnancy. Digital examination revealed the uterus completely anteverted. By curving an ordinary uterine sound to a right angle it was introduced to the fundus after much difficulty, but the angle to which the sound was bent prevented its being rotated, nor could any form of stem be introduced to help to replace the uterus, and chloroform was steadily refused. The instrument figured was devised and made in two weeks entirely by myself and has one or two important points. It is made entirely of metal—German silver; its parts are fixed together by screws, so that it can be readily



The upper figure is a plan showing the screw rod which works the probe through different angles. The middle figure shows the instrument itself. The lower figure shows the handle for working the screw rod.

taken to pieces, if necessary, for thorough disinfection; and also during its use, while the right forefinger retains its position at the os externum, it can readily be manipulated backwards or forwards by the left hand turning the screw nut, the length of the end of the screw projecting beyond the nut serving as an index to the position of the probe end of the sound. It is sufficient to say that in a week or two after its employment the uterus in this case was restored to its natural position, menstruation was re-established, and a month after all treatment had been suspended the uterus was still in its normal position. There is nothing new under the sun, but I do not know of any instrument which possesses the useful points of the above, and having served me well I trust it may be of use to others. Messrs. Matthews Bros., of 10, New Oxford-street, have undertaken its manufacture.

Madeira. F. J. HICKS.

THE *RÔLE* OF THE MOSQUITO IN THE EVOLUTION OF THE MALARIAL PARASITE.

THE RECENT RESEARCHES OF SURGEON-MAJOR RONALD ROSS, I.M.S.

AT the meeting of the British Medical Association in Edinburgh Dr. Patrick Manson, the President of the Section of Tropical Diseases, gave by special request and with the permission of the Secretary of State for India and of Surgeon-Major Ronald Ross, I.M.S., a lecture and exposition of the work done lately by the latter in the investigation of this subject. Surgeon-Major Ross has also sent us an advance copy of his recent report on the cultivation of Proteosoma, Labbé, in grey mosquitos. From this report we make the following extracts:—

"*A discovery of pigmented cells in grey mosquitos fed on larks with proteosoma.*—In February, 1898, I was placed by the Government of India on special duty to prosecute these researches and was given the use of Surgeon-Lieutenant-Colonel D. D. Cunningham's laboratory in Calcutta for the purpose. Steps were immediately taken to find again, if possible, the pigmented cells by feeding different species of mosquitos on blood containing different species of gymnosporidia. It was found that Calcutta abounded in the grey or barred-back species of mosquito, which is the filaria-bearing species, and with which I had already experimented. These had uniformly yielded negative results in Secunderabad when fed on blood containing crescents. Nevertheless, owing to difficulties in the way of obtaining other varieties, both of mosquitos and of malaria cases, numbers of this kind were again fed on a patient infected with crescents. Out of forty-one of these searched exhaustively for pigmented cells not one contained them. An unrecorded number, say fifty more, examined unfed, or, after feeding on healthy persons, gave similar negative results. As it was not the malarious season of the year, and as cases of hæmamœbiasis suitable for these experiments were not at all easy to procure, it was thought advisable to commence work on the so-called malaria parasites of birds. Accordingly a crow (*Corvus splendens*) and two tame pigeons infected with halteridium were obtained; and on the night of March 11th and 12th these, with four short-toed larks (*Calandretta dukhunensis*) and six sparrows (*Passer Indica*), whose blood had not yet been carefully examined, were placed in their cages, all within the same mosquito netting, and a number of grey mosquitos of the species I had lately been experimenting with were released within the net. Next morning numbers of these insects were found gorged with blood and were caught in test-tubes in which they were kept alive for two or three days.

"On March 13th I commenced to examine them. Out of fourteen of them pigmented cells were at last found in one. Believing as I did that these cells are derived from the gymnosporidia I judged from this experiment that the grey mosquito which now contained them had fed itself on one of the birds which happened to be infected by a parasite capable of transference to the grey species of mosquito. As all the birds had been placed together in the same net the question now was which of them had the mosquito fed herself upon. This could be easily ascertained. A number of mosquitos of the same species had meanwhile been fed separately on the crow and two pigeons with halteridium; but out of thirty-four of these examined not one contained pigmented cells. Hence I came to the conclusion that the mosquito with pigmented cells had not derived them from the crow and the two pigeons. The larks and sparrows remained. The blood of these had not yet been carefully searched. I now found that three of the larks and one of the sparrows contained proteosoma (Labbé) and therefore thought it possible that the mosquito had been infected from one of these. Accordingly, on the night of March 17th and 18th a number of grey mosquitos were released on the three larks with proteosoma and next morning it was found that nine of these had fed themselves. On the morning of March 20th—that is, from forty-eight to sixty hours after feeding—these nine insects were examined. Pigmented cells were found in no less than five of them. After the long-continued negative experiments with this kind of mosquito

(and, indeed, I may say, after three years' doubtful attempts to cultivate these parasites) this result was almost conclusive. It indicated, as was surmised before, that when a certain species of mosquito is fed on blood containing a certain species of gymnosporidia pigmented cells are developed. Hence it would follow, as an easy corollary, that the cells are a stage in the life-history of the gymnosporidium in the mosquito.

"It was now necessary, however, to confirm and amplify this observation and obtain formal proofs of the theorem by repeating these experiments and by studying the pigmented cells themselves. Accordingly from March 18th to the present date (May 21st, 1898) many differential experiments have been completed by feeding grey mosquitos as follows: (*a*) on larks, sparrows, and a crow with proteosoma; (*b*) on crows, pigeons, and other birds with halteridium only; (*c*) on a lark and a sparrow with immature proteosoma only; (*d*) on a healthy sparrow. Only the insects fed on group (*a*) have contained pigmented cells.

"MacCullum had previously shown that in the case of the analogous parasite—the halteridium—the flagellum, of the flagellated phase, after breaking away entered certain spherical, pigmented halteridia, causing them to be transformed into little travelling pigmented vermicules, which, in virtue of their sharp beak and mechanical power, traverse freely red and white corpuscles. Analogy suggests that a similar thing occurs in proteosoma and that the travelling pigmented proteosoma vermicule enters the tissue of the mosquito's stomach and becomes Ross's pigmented bodies, in the same way as Manson has shown took place in the case of the filaria sanguinis hominis. Arrived in the stomach wall of the mosquito, the proteosoma increases rapidly in size until it projects beyond the stomach walls into the cœlom or body cavity of the mosquito as a rounded body, which he styles the proteosoma-coccidia. During its progress and growth various changes take place in size and in the appearance of the contents of the coccidia. Pigment diminishes and then disappears and as the parasite protrudes into the cœlom it is seen that the contents have a more or less granular appearance.

"I have said that after this point I have witnessed no further growth of the coccidia, even in mosquitos kept alive to the twelfth day. Hence we may perhaps expect that they have become ripe for sporulation. No such thing has, however, been observed; and we may therefore conjecture, unless I happened to have overlooked it, that it may occur either (*a*) in the living insect after twelve days, or (*b*) some time after the insect's death. Further research is therefore required on this which now becomes the most important and interesting period of the life-history of the gymnosporidia, because on it depend our chances of future progress. To plunge into hypothesis for a moment we may remark that since the mature coccidia find themselves in a closed cavity—namely, the body cavity of the host—there appear to be no means by which they can escape from that host during its life to undergo sporulation in external nature, as is the case with coccidium oviforme. It would appear then that sporulation should occur either within the living host, as with eimeria, or within the dead host. The first would point to a completion of the life cycle by a direct infection of men and birds by the coccidium spores in the mosquito; the second to a more circuitous infection, perhaps by a second generation living free in water."

In the paper read by Dr. Patrick Manson at the Edinburgh meeting of the British Medical Association the speaker was able to quote from telegraphic communications with Surgeon-Major Ross which showed that the further researches spoken of have been undertaken. The next stage seems to be that the coccidia now burst and what Surgeon-Major Ross calls germinal vermicules which had formed in its interior are set free in the body, blood and tissues of the mosquito. Then came a step in the investigation of great consequence: it was no other than the discovery of these vermicules in the venemo-salivary glands of the mosquito. Surgeon-Major Ross during dissection of the mosquito found a couple of head glands with a duct leading towards the proboscis of the animal and traced the parasite vermicules into these glands. The climax of the discovery was now within his grasp and he elucidated it thus: He allowed mosquitos to feed on birds infected with proteosoma; after a few days he fed the mosquitos on birds whose blood was void of any parasite infection. He found in due course that the parasite-bearing mosquito had infected the healthy birds and that their blood was charged with proteosoma.

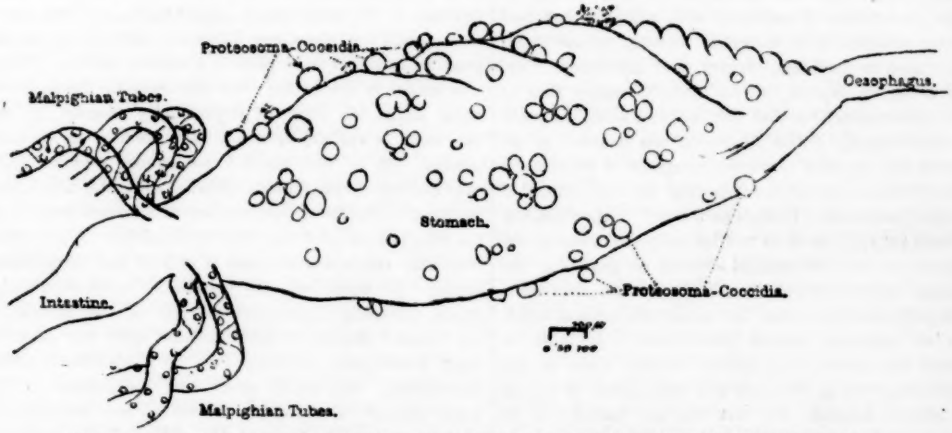


Figure reproduced from Surgeon-Major Ross's report and showing appearance of coccidia on the sixth and seventh day.

Thus the analogy between bird and human infection has only to be proved to establish that the mosquito is a carrier of malaria and an infector of man. Much has yet to be done, however, before the full significance of the mosquito in malaria is worked out. Malaria, we know, multiplies without the intermediary of any vertebrate. Does it do so solely in mosquitos? If so, we have yet to learn how it passes from mosquito to mosquito. Does it multiply in other media? If so, what are they? There is here given merely the outline of Surgeon-Major Ross's work. Doubtless he or others will soon grapple with the other problems it suggests and show how to solve them. It is impossible in a short space to give in detail the multitudinous experiments and observations which he has carried out. Suffice it to say that they have been done in a masterly way. The practical applications of the discovery are immeasurable and the establishment of the fact that as the bite of the snake or the rabid dog inoculates the blood of the victims of these creatures so the mosquito conveys malaria, would open up a new and hopeful phase as regards the prevention of disease in the tropics.

THE LANCET.

LONDON: SATURDAY, AUGUST 20, 1898.

A QUESTION of considerable importance to students, and one concerning the working of our medical schools, was asked by Mr. ARTHUR O'CONNOR in the House of Commons last week. The question was whether the Home Secretary was aware that a poor woman expecting her confinement frequently applied to one of the general hospitals in London for a medical man to attend her and that in such a case a student was often sent who had had little or no experience, or might even never have attended a case before, and that no intimation was given that the person sent was not a fully qualified medical practitioner, and whether the General Medical Council had not prohibited the employment by private practitioners of assistants who, although they had taken out a full course of midwifery training, had not taken out a degree in medicine, surgery, and midwifery. Mr. JESSE COLLINGS replied for the Home Secretary that he had no information, but that full inquiries would be made upon the subject. Before discussing the question at all we would call attention to the last paragraph of the General Medical Council's resolutions respecting the employment of unqualified assistants. It reads as follows: "The foregoing notices do not apply so as to restrict the proper training and instruction of *bonâ-fide* medical students as pupils, or the legitimate employment of dressers, midwives, dispensers, and surgery attendants under the immediate personal supervision of registered medical practitioners." It must be admitted that there is no specific mention made of the students employed in the maternity departments of all our large general hospitals, but that they are intended to be included under the generic term "dressers" there can be no doubt.

To anyone imperfectly acquainted with the true facts of the case it might appear as if the resolutions of the General Medical Council were being set at defiance under the circumstances mentioned by Mr. O'CONNOR, but a little consideration of the matter will show that this is far from being the case. It is, of course, quite true that when a poor woman applies at a general hospital for attendance at her confinement a student is sent to the case, but the patient and her friends, although they commonly dub him "doctor," know full well that he does not represent the whole of the medical assistance they can, if necessary, obtain. They know that if the labour is in any degree abnormal they will have the services of a gentleman whom they often call "the head doctor," a registered medical practitioner, the obstetric assistant, under whose direct personal supervision the students attend such cases and to whom they are directly responsible. Further, they know that in cases of extreme urgency they can have the benefit of the skill and experience of one of the obstetric physicians attached to the hospital at which they have applied for assistance. It is obvious that a student who is attending his first case has had no previous experience, but in a properly conducted maternity department due provision is taken to guard against a student being allowed to go to his first case alone, and until he has a satisfactory theoretical knowledge of his subject. One of the rules which should be always insisted upon—and in many places is so—in the conduct of an extern maternity department is that the student shall be accompanied to his first cases by one or other of the obstetric assistants. There is to our mind no comparison between the position of the patient attended by a medical student who is not even allowed to assume as much responsibility as an ordinary midwife, and who is working under the immediate supervision of a fully qualified medical practitioner, and that of the patient who is attended by an unqualified assistant. No doubt in many cases the unqualified assistant is a man of much skill and experience, and well fitted to deal with any of the complications of midwifery. The position he holds, however, in the mind of the patient is that of a private practitioner and not in the least that of a hospital medical officer, and although she is quite ignorant of the subtleties of qualifications, yet she knows well enough that there is a difference between the private practitioner with a brass plate or a surgery and the student who comes to attend her when she sends to the hospital. Then, again, the degree of responsibility assumed in the two cases is entirely different. The student, as we have pointed out, is not allowed to assume even as much responsibility as the ordinary midwife, while the unqualified assistant, in charge as he often was of a branch practice of his principal, assumed the entire responsibility of, and often conducted single-handed, cases of difficult and complicated labour. It would not be possible to carry on a large extern maternity department at any of our schools if the General Medical Council insisted upon the students being accompanied in every case by a qualified medical practitioner. It would entail the appointment of a large number of obstetric assistants, and although it would undoubtedly increase the value of the students' training in midwifery yet it would be impracticable under present conditions.

The training of our London students in midwifery is certainly deficient, but we are afraid that it will continue to be deficient. Even if the necessary lying-in hospitals at which students could be trained under the eye of experienced resident officers were built we doubt very much if the patients could be induced to enter them. Our own experience is that the women in the majority of cases find it more convenient and cheaper to be confined at their own homes; and it is often difficult enough to get them to go into a hospital even when they have been told that their confinement may be a difficult or a dangerous one. The practical inexperience of the student attending his first case cannot obviously be overcome. We think, however, that the rules laid down at most of our medical schools are amply sufficient to provide against the danger of any student attending a case without at any rate a good theoretical knowledge of his subject. It is, we gather, the general custom not to allow a student to take an appointment in the maternity department until he has

attended the courses of lectures in midwifery, both theoretical and practical, or, as owing to the exigencies of working the department it is sometimes necessary to appoint a student before he has had time to finish his courses of lectures, until he has satisfied some responsible person—usually the obstetric physician in charge—that he has a sufficient amount of knowledge of the subject to admit of his being placed upon the roster for duty. Regulations of this kind, together with the rule that one of the obstetric assistants must always accompany students to their first cases, would seem to be amply sufficient to ensure that the student shall be able to recognise any abnormality in the cases which he attends, which is strictly all that he is required to do. We have no doubt that the General Medical Council will be able to assure the Home Secretary that the positions of the student and the unqualified assistant are not one and the same, and that the safeguards at present in vogue in our maternity departments are such as to obviate any risk of the contravention of their resolutions with regard to the employment of unqualified persons as assistants or otherwise.

WHILE it is highly proper to note the falling off in the amount of the Metropolitan Hospital Sunday Fund collection for 1898 it would be wrong to attach too much importance to it or to indulge in any hasty theory by way of explanation. The whole circumstances of the last two years have been such as to produce slight irregularities in the yield of the ordinary sources of hospital income, amongst which the Hospital Sunday Fund must always rank high. It is the greatest tribute to HER MAJESTY'S reign that it has stimulated humane and benevolent work in a degree unprecedented in any previous period. The multiplication of charities is enormous, and the number and variety of the demands for voluntary contributions towards all conceivable objects—some of them questionable, many of them excellent—have increased proportionately. No one can have failed to notice the increase of late both in number and insistence of requests for money to be allotted to the particular purpose of supporting hospitals. Changes in the economic conditions of the country have so profoundly affected the incomes of some of our principal metropolitan hospitals that special appeals on their behalf have had to be made and the response to such appeals by the public has been very generous. When memorials of HER MAJESTY'S reign were being devised nothing fitter could be suggested than a fund for the mitigation or removal of hospital indebtedness. The appeals for the individual hospitals and the organisation of the PRINCE OF WALES'S Fund have the powerful support of His Royal Highness and other members of the Royal Family, and the real matter of surprise, perhaps, is that these special circumstances have not affected the Hospital Sunday Fund more, rather than that they have affected it a little.

Sir HENRY BURDETT'S theory that the falling off in the Fund is largely due to the creation of limited companies is not to be dismissed hastily, but it was very well answered by Sir SYDNEY WATERLOW. Besides, it is scarcely consistent with the former gentleman's belief that the hospitals individually have been faring better. If the moral effect of limited companies is good for the individual hospitals it can scarcely be bad for the Hospital Sunday Fund. It would be lamentable, indeed, if the limited company system, which seems destined to play so great a part in the evolution of commerce, has the moral effect on individuals which is thus attributed to it. According to Sir H. BURDETT there are 10,000 of these companies now in England, and the operation of them is to weaken the sense of individual obligation to charities. It is difficult to reach individuals and to estimate their power to help charities when they are all mixed up together in commercial adventures. In that sense it is difficult to apportion their responsibility to the great charities of the land and those who like to shirk such responsibilities may take the advantage of their being, so to speak, in a crowd. But we are unwilling to believe that there are many individuals who would do so. The Hospital Sunday Fund owes its largest collection to a prosperous year on the Stock Exchange, and whatever may be the sins of the members of that body they have never been insensible to the cry of the helpless and the sick. We come to the conclusion that we must look in other directions for the causes of the slight decrease in the Hospital Sunday collection for 1898. Sir H. BURDETT is as confident in exempting the PRINCE OF WALES'S Fund from any blame for the diminished amount of the Hospital Sunday Fund as in his conviction that the growth of limited liability companies affords the explanation. He may be right. And we feel sure that neither the PRINCE OF WALES nor any one of his colleagues desires any injury to the Hospital Sunday collection. In this belief we do not permit ourselves to doubt that care will be taken next year to avoid the repetition of an unfortunate appearance of competition by the issue of a report and appeal from the PRINCE OF WALES on the very eve of Hospital Sunday. To our own knowledge this report, dated June 6th, was received by some persons on the day before Hospital Sunday.

The Council of the Hospital Sunday Fund will fail in its duty if it relaxes its vigilance or rests too much on its oars. Though it has refused any formal inquiry into the decrease it ought to take pains to ascertain exactly where the failure is and to prevent the recurrence of it next year. In one thing the Council of the PRINCE OF WALES'S Fund promises to set the older Council a good example: it intends to satisfy itself as to the merits and needs of the hospitals and to be guided by the results of its inquiry into these. The Council of the Hospital Sunday Fund has been apt to regard itself as a mere dispenser of gifts for hospitals without any corresponding responsibility for the efficiency of the hospital system and for the prevention of those abuses of it which hinder charity and demoralise unfit recipients. There have been indications of late of a larger view of its duties and obligations. If these are fulfilled the Fund will have a future of lasting prosperity. It has the religion of the metropolis for its foundation and that will not fail. Other influences must vary and must be more or less temporary, but this abides. The contributions of the wealthy should still be personal and distinctive. Our own belief is that with deeper religious views among those who are stewards of wealth large personal gifts will be "cast into the treasury," such as that of GUY himself, which will raise

the committees of hospitals out of all petty cares—for instance those somewhat pathetically expressed by the Hon. SYDNEY HOLLAND, chairman of the London Hospital—about the balancing of income and expenditure. Half-a-dozen rich men have it in their power to do this great service and to redeem wealth from discredit and all the risks which attach to its possessors, and they can have no better medium through which to do it than the Council of the Hospital Sunday Fund.

THE answer of the Chancellor of the Exchequer to Dr. FARQUHARSON on July 19th with reference to the matter of a grant of public money to the General Medical Council contained, we are glad to see, no hint that Parliament would be unwilling to give the Council increased powers and we hope to see the question revived in a more definite form. The purification of the medical profession, to be thorough, would of necessity involve the prohibition of unqualified practice. For what happens at present in the medical and legal professions respectively? A solicitor is struck off the rolls and by that process he is debarred from following the profession of a solicitor. A medical man is struck off the Register and he abides in his own house, his plate is still on the door and he continues his practice as if nothing had happened because it is not against the law for an unqualified or unregistered person to practise. There is nothing more unfair than the position in which the medical profession stands to-day. A man may have gone through years of study, have passed several searching examinations, have held appointments involving very hard work and great responsibility while receiving little or no emolument for the same, and despite all this any ignorant swindler who has never seen the inside of a hospital, who knows no anatomy or physiology, and who is ignorant of the action of any drug, has similar rights with him to see patients or to prescribe and give away (not sell) drugs. The sole advantages which the qualified and registered man possesses over his unqualified competitor are those of being able to sign a legal death certificate, to sue for fees in a court of justice, to compete for certain appointments, and of exemption from certain civic duties. These are but a poor return for five years of hard study and the expenditure of at the very least £1000, and the only way in which the unqualified practitioner becomes amenable to the law is in case he "wilfully" and "falsely" pretends to be a registered person. The net of the Solicitors Act has a much smaller mesh. By it there need be no question of either "wilfully" or "falsely" pretending—the mere fact of such pretence having occurred is quite enough to secure a conviction.

That the position of the medical profession is as it is to-day is owing mainly to two factors. The one is the carelessness and want of cohesion among members of the medical profession themselves and this factor is by far the more important. Parliament never does anything for any body or persons unless they possess the power of annoying Ministries by their actions within the walls of the House, or, as was the case with the Dissenting community at the time of the Church rates agitation, can show a solid consensus of opinion outside the House. Now the medical profession at the present moment is not an organised nuisance either within or without the House of Commons and accordingly if any legislation affects it at all it does so adversely. The other factor, less significant than the apathy of the medical profession, but not without its evil influence, is the fatuity of the average British citizen in matters concerning his health. It is nothing new. To go no further back than the beginning of the century the notorious quack ST. JOHN LONG was able to bring plenty of witnesses, drawn from the upper classes of society and from those who had received a good education, to bear witness to the efficacy of his treatment. Numbers of persons of influence in their respective spheres are still of the opinion of Lady SOUTHDOWN, who it will be remembered remarked of a regular apothecary: "A most dangerous and ignorant practitioner ..... I have providentially been the means of removing him from several houses, though in one or two instances I did not arrive in time. I could not save poor dear General Glanders, who was dying under the hands of that ignorant man—dying. He rallied a little under the Podgers' pills which I administered to him; but, alas, it was too late. His death was delightful, however, and his change was only for the better." *Mutato nomine*, the same thing exists nowadays, only instead of Podgers we have the reverend specialist for this or that, the bone-setter, the herb-doctor, and the exponent of safe medicine or "natural" therapeutics.

The prohibition of unqualified practice is outside the sphere of practical politics. Parliament as a body would never move in the matter, first on account of prevalent ideas concerning personal freedom, and secondly because many of its members are enamoured of unorthodox medical practices themselves. But we can at any rate demand that no one who has not been through a recognised medical curriculum shall be able with impunity to delude the public into thinking that he is a medical man by assuming the title of "doctor," for the public as a whole considers that the term "doctor" applies solely to the profession of medicine. Again, in the case of a felon the body or bodies which have conferred upon him degrees or diplomas should have the power to remove his name from their rolls upon his conviction and to place him on a footing with persons of the FERNANDI type—to recall to the recollection of our readers a particular quack. The knowledge of the felon, of course, will be the same after his conviction as before, but he should not be allowed to practise, under a title which implies respectability, a profession which entails a keen sense of honour and responsibility. The monopoly at present enjoyed by members of the legal profession will never be ours, for it is of the very essence of codes of law that there should be no room for individual opinion. But liberty in the matter of irregular practice has degenerated into license, and the medical profession as a whole has a right to ask that some restraining influence should be brought to bear upon the ignorant and the criminal so as to prevent their reaping where they have not sowed.

IF there be one disease more than another concerning which the pathologist might well be entitled to say that he had complete knowledge it would be the condition

known as portal cirrhosis of the liver. Constituting a well-marked variety of interstitial hepatitis, its characteristics are so well defined and its concomitant lesions so well marked that from the etiological standpoint it used to seem enough to refer it to a single antecedent—namely, chronic alcoholism. As knowledge has grown pathologists have been less inclined to accept so limited a conception of the manner of its origin and cases have not been wanting where it would seem that other toxic agencies, some of which have probably been due to specific infections, have operated to bring about those lesions which ultimately result in the familiar hob-nailed contraction of the organ with its accompanying obstruction of the portal circulation. Yet so far as we know the cases in which alcohol can have played no part are comparatively rare. It is otherwise with some other forms of progressive interstitial hepatitis, such as that which is associated with syphilitic infection or that where the general intercellular framework is involved, producing the variety known as "monolobular," "biliary" or "hypertrophic" cirrhosis. The last-named condition—which, it may be remarked, is not universally deemed to be specifically distinct from the multilobular variety—has been far more frequently referred to the action of infective agencies, so that less surprise may be occasioned by the discoveries made by Professor ADAMI, as described by him in the paper which we published in THE LANCET of August 13th, in respect to this form of cirrhosis than must necessarily be the case in regard to the more familiar type. For we venture to think that many clinical observers as well as pathologists will receive with something like amazement the announcement that micro-organisms have any share at all in the production of portal cirrhosis.

Let us very briefly summarise the observations which have led Professor ADAMI to a conclusion which, if correct, cannot but have important bearings upon the conception of the process of progressive inflammatory changes in all organs and not merely in the liver. The determining influence in his inquiry into hepatic cirrhosis in man was his discovery, after much patient labour and care in preparation, of a definite microbe in an infective disease of cattle, known as the Pictou disease, which for several years attacked the herds in Nova Scotia. The fact that this affection—obviously transmissible as it was—was characterised by a form of progressive hepatic cirrhosis was first ascertained by Professor W. OSLER and Dr. WYATT JOHNSTON and amply confirmed by Professor ADAMI, who was instructed to continue the investigations initiated by them. Professor ADAMI, however, also succeeded (in each of the animals which he examined) in isolating a definite micro-organism from the abdominal glands and liver-juice as well as occasionally from other organs and fluids. The microbe was of small size and exhibited a polymorphous character which added to the difficulties of its recognition. He succeeded, however, in cultivating it in various media and found that it was pathogenic for rabbits, guinea-pigs, and mice, and that it was essentially a short encapsuled bacillus somewhat resembling the organism of hæmorrhagic septicæmia in the lower animals. He does not appear to have given this organism a name, but he thinks that its characters are sufficiently definite and its appearance in the Pictou cattle disease sufficiently constant to warrant its being regarded as the pathogenic agent in that infective disorder.

Now we doubt not that many bacteriologists would have been content to have stopped here, for it would hardly enter into their minds that this special infective disease of cattle could possibly have any relations with so common and so chronic an affection as cirrhosis of the liver in man. Not so Professor ADAMI. He felt that in spite of superficial differences there were certain marked resemblances, both clinical and pathological, between the bovine and human diseases. He did not arrive at this opinion suddenly and when he did set out upon his search for microbes in the liver and other tissues of the subjects of cirrhosis he met with many difficulties, especially in the matter of staining. At length he was enabled to detect, with an uniformity which excludes the idea of accident or of external contamination, a minute microbe which evidently requires great patience and skill in its discrimination. Moreover, like the Pictou disease organism, it presented itself under more than one form, although we gather from his remarks that Professor ADAMI is inclined to attribute this polymorphism in part to differences in intensity of staining. He found, however, some purely coccal forms and some bacillary. The microbe occurred within liver cells and in the midst of the actively growing connective tissue, the small-celled infiltration which is so characteristic of cirrhosis, and he subsequently found it elsewhere in the body. He did not at first venture to identify the organisms thus detected in the human disease with those present in the bovine, but the case which he examined just as his paper had been completed seems to have possessed characters and yielded reactions so closely resembling those of the Pictou disease as to raise more than a suspicion of their identity.

In his paper, which must in truth be regarded only as a preliminary note, for the subject requires much working out, Professor ADAMI wisely refrains from speculating upon the bearings which his discovery must necessarily have upon our conceptions of the nature of the hepatic cirrhoses. We say "the cirrhoses," for he has found these organisms in more than one variety of these interstitial inflammations of the liver. Nor shall we venture to go further than he has done. We have such respect for his acumen and ability as a pathologist and a bacteriologist that we do not think it possible that he could have been misled by *ignes fatui* or have erred in describing as micro-organisms any inert particles of dead matter. Indeed, he has anticipated so obvious a criticism by his cultivations. We accept, then, fully the fact of his discovery, but we reserve the expression of any opinion as to its bearings on pathology, feeling that these are of far wider application than that of the etiology of common cirrhosis. For if these microbes be of pathogenic importance an extension will be given to the *rôle* of the microbe in disease which is well-nigh illimitable. It seems as if the bacteriologist would in time recast all our pathology. His sphere of "infectivity" is fast expanding to embrace conditions which we call "chronic" as well as those which we term "acute." The "trail" of the microbe "is over them all" and none can foretell what the future may reveal.

Annotations.

"Ne quid nimis."

"DRUNK OR DYING?"

ANOTHER of those unfortunate errors in judgment which bring discredit upon hospitals and are indubitably most regrettable was investigated in the Rotherhithe Coroner's Court before the deputy coroner on August 15th. The inquiry was into the death of a carman named James Fisher, aged fifty-six years. At 10 P.M. on the night of August 10th he was thrown out of a van in the Union-road, Rotherhithe, and found lying unconscious on the pavement. A constable summoned a neighbouring practitioner, who gave evidence to the effect that Fisher was suffering from two scalp wounds and was bleeding from the nose and from the ear. Fisher was conveyed to Guy's Hospital on an ambulance. The house surgeon in his evidence said that he saw Fisher a few minutes after his admission; neither his nose nor his ear was then bleeding. He detained him for about one and a half hours—i.e., until 12.15 A.M. He (Fisher) was very drowsy and witness acknowledged that he wrongly attributed his condition to alcohol. As no fresh symptoms developed Fisher was sent to the police-station and charged with being drunk. Here he was visited many times up to 8 A.M., when he was found walking up and down. He said he felt "very queer" and fell down. The divisional surgeon was called and ordered him to be removed to the infirmary, where he died about 11 A.M. on August 11th. At the post-mortem examination a fracture of the base of the skull and two fractured ribs were found. Now we have no wish to conceal the fact that the house surgeon, as, indeed, he confessed, committed a most serious error of judgment, but what we do wish to point out is that the public and the glib newspaper paragraphist have no conception of the difficulties which encompass a house surgeon upon occasions such as the one upon which we now comment. To begin with, in many cases it is all but impossible to distinguish between the condition brought about by brain injury and that due to alcohol. In a great many cases a patient brought in with a scalp wound exhibiting signs of mental disturbance is partly drunk and partly drowsy from cerebral compression. On the other hand, he may be simply drunk and have a scalp wound in addition, which latter has nothing to do with his mental condition; or he may have a scalp wound and cerebral mischief without having taken any alcohol; or, again, he may have cerebral mischief, a scalp wound, and smell strongly of alcohol owing to some injudicious but kindly intentioned person having administered alcohol to him just before his admission. Out of all these varying conditions the unfortunate house surgeon has to make a fairly accurate diagnosis, generally late at night, after a hard day's work, and house surgeons and house physicians, too, are overworked to an extent which would not be tolerated for a moment in the case of a milliner or a factory hand. Cases of this description are brought to a big hospital to the number of about a dozen nightly. It is obviously impossible to take them all in and it speaks volumes for the care and good judgment of our young medical men that such lamentable accidents as the present do not occur oftener than they do. The only means of avoiding such in future is to lay down a rule that every patient with a scalp wound or any patient without a wound who shows signs of mental inhibition should be detained for 24 hours. This will involve an increase of staff and of accommodation, and if the public, as represented by the lay press, which is not unnaturally so ready to find fault, will provide the means for such no one would be more happy than the house surgeon or house physician. Only those who have held such posts know what the responsibility means, and though we offer our sincere condolences to the relatives of the deceased we are none the less sorry for the house surgeon in question.

PUBLIC ABATTOIRS FOR DUBLIN.

IN view of the Congress of the Royal Institute of Public Health, which commenced in Dublin on August 18th, Dr. C. F. Moore sent to the *Dublin Press* a letter putting forward some suggestions for the consideration of the said Congress. Briefly, they are as follows: that powers should be acquired to erect an abattoir and knacker's yard on the reclaimed ground near the Alexandra Basin; that similar powers should be acquired for the erection of like buildings on the Pigeonhouse-road; that compulsory powers should be sought for the use of these establishments, for the abolition of the sixty knackers' yards and slaughter-houses at present in the city of Dublin, and of the present most ill-placed abattoir outside the borough boundary. Dr. Moore goes on to say that these measures will be imperatively called for when the new scheme of main drainage is carried out. We quite agree with Dr. Moore and, in fact, would go further and say that private slaughter-houses should be done away with everywhere under all conditions. Their existence is a fruitful cause of cruelty, "nuisance," and disease, for meat-inspection cannot be properly carried on except in a public abattoir. As for knackers' yards, they must exist, but they should certainly never be allowed within the vicinity of inhabited houses, however carefully the business is carried on, and we do not imply that this is not the case in most instances. A knacker, it must be remembered, is not only one who kills healthy but disabled horses, but one who gets rid of hopelessly diseased horses and other animals, in addition to which he generally carries on the trade of boiling flesh and offal for cat's-meat. Such an occupation is most certainly one to be carried on at a distance from any collection of inhabited houses. We are far from saying that London is faultless in these matters, but it is gradually getting better, and it behoves Dublin, a city which being very much smaller can bring about reforms more easily, to take Dr. Moore's advice seriously to heart and to begin to set her house in order.

THE FUNCTIONS OF THE SUPRARENAL CAPSULES.

AN interesting memoir by M. P. Langlois appears in the recently published *Travaux du Laboratoire* of M. Charles Richet. M. Langlois' observations were made upon frogs, rabbits, guinea-pigs, and dogs. In frogs the presence of peculiar bodies was first noted by Swammerdam, who mentioned them under the name of corpora heterogenia, but it was only in 1842 that Gruby pointed out the analogy of these bodies to the suprarenal capsules of other vertebrates. Ecker, Pettit, and others described them at greater length. They form in these animals a mammillated band or tract of yellowish colour situated on the ventral surface of the kidneys, and are either seated on the veins or in the walls of these vessels. M. Langlois' first experiments were upon the effects of destruction of one or both of the capsules in the frog—the destruction being accomplished by means of red hot platinum wire—and he satisfied himself that death invariably follows destruction of both capsules, though not of one alone, and that the fatal issue is not due to the shock of the operation or to any inhibitory action being exerted, but to the suppression or abolition of organs essential to life. The grounds for this opinion are that no marked symptoms are observed during

the first twenty-four hours after total destruction, secondly because the fatal result is postponed when the destruction is incomplete, and lastly because the subcutaneous insertion of fragments of the kidney with the capsules prolongs life, though such a proceeding would be without influence on the phenomena of inhibition. Although death is the invariable consequence of the destruction of both adrenals the duration of the survival varies. The average duration of life after the operation is about forty-eight hours, but in winter, and in the hybernating frog, life may be prolonged for twelve or thirteen days. The first symptoms observed after the operation are a kind of apathy and indisposition to move even when irritated; then ensued incoördination of the movements, especially of the hinder limbs, followed by complete paralysis, and succeeded by a similar succession of events in the forelimbs; the respiration became slower, the pupils contracted, the cardiac contractions became feebler, the circulation less active, and the animal died. Further experiments have led to the belief that the death of the animal is not due to any disturbance of the renal functions. The conclusion at which the writers arrive is that after the removal of both adrenals there is a true auto-intoxication, the animals generating poisons which are normally either destroyed or changed in the interior of the gland or by some material formed by the gland and poured into the blood. The poisons are probably the products of muscular activity and exert a special influence on the heart and circulatory system.

THE TREATMENT OF ARTERIO-VENOUS ANEURYSM OF THE ORBIT.

IN the *New York Medical Journal* of June 11th, 1898, Dr. J. H. Woodward has published the following case. A woman, aged thirty-nine years, noticed one day a noise in her head which became continuous and distressing and was soon followed by proptosis of the left eye. After six months the veins of the left eyelid and bulbar conjunctiva were dilated; the supra-orbital and infra-orbital vessels were greatly dilated; and especially in the former an aneurysmal thrill was perceptible. With the stethoscope a bruit could be heard above the eye. Compression of the left carotid artery checked the pulsations and stopped the noises. The retinal veins were tortuous and dilated and there were several small retinal hæmorrhages. In December, 1893, the left carotid artery was ligatured. The pulsations and noises were stopped and the proptosis diminished, but the noises reappeared in two months. In May, 1894, the proptosis was much less than before operation and the vessels were only slightly dilated and there were aneurysmal thrill and bruit. Dr. Woodward intended to ligature the right common carotid artery, but finding that compression of the arteries of the collateral circulation at the root of the nose stopped the symptoms he ligatured these. A complete recovery resulted from this operation, of which this is the first recorded case.

VACCINATION AND THE QUEEN'S SPEECH.

THE absence of any reference to the new Vaccination Act in the Speech from the Throne on the closing of Parliament is by no means without its significance. Her Majesty's example in matters affecting the health of her people has always been in the direction of encouraging everything which science and practice have proved to be of real benefit to them, and in no matter has this example been more marked than in the advocacy of vaccination as the real preventive of small-pox. When Parliament was opened the Vaccination Bill was announced by the Queen to the Houses of Parliament and through them to her people. The Bill has passed in a form which causes deep anxiety to a large portion of the more intelligent classes, and in dissolving Parliament no reference is made to it by Her Majesty. It is well known that the preparation of the Queen's Speech is no mere matter of form which is delegated to her Ministers. Hence the significance of this omission.

THE SPIRITUOUS STRENGTH OF ALCOHOLIC LIQUIDS.

THIS must be indeed an age of deception when the resources of the fabricator are directed towards making spirituous liquids appear in the estimation of the public to be stronger than they actually are. It is a common but erroneous idea that the strength of a spirit may be accurately judged by its pungency. This notion has given the adulterator an excellent opportunity. He has hit on the plan of adding to spirits an alcoholic extract of "paprika" or red Hungarian pepper. Thus a sharp taste is communicated to the liquid and though it contains less alcohol it produces on imbibition a greater sensation of warmth than do stronger spirits. The fraud, however, has been brought to light and confirmed by the result obtained after making up mixed spirits in the manner indicated. The method is not merely a fraud, but is likely to cause very serious injury to the health of the consumer.

AID TO DEEP-SEA FISHERMEN.

THE losses by death at Magenta and Solferino amounted to 25 per 1000 in the conquering army, and this, too, was the precise death-rate among the French fishermen who during the season of 1897 frequented the shores of Newfoundland and Iceland for the purpose of catching codfish. In the latter case the casualties, out of a total strength estimated at 14,000 men and boys, numbered 352, but only 64 deaths were due to disease. Shipwreck and drowning accounted for the remainder. It seems, according to Dr. Bonnafy of the French navy, who has just published an interesting pamphlet on the subject,[1] that each fishing vessel carries a series of light flat-bottomed boats which are constructed to fit each other like saucers so as to occupy as little storage room as possible. The vessels having cast anchor the unfortunate sailors go fishing in these frail "dories," of which every year a considerable number disappear with all on board, chiefly during fogs, never to be heard of more. It is in this way that much of the loss occurs, but there is also another source of fatality. In order to save a few hours the captains of certain liners between Europe and North America do not hesitate to cross the bank where the fishermen are at work, and as they do not moderate their enormous speed even in the thickest weather it is easy to imagine how disastrous the consequences may be to the stationary and comparatively minute craft. It is only of late years that attention has been directed to the wretched conditions, hygienic and moral, under which the deep-sea fishing of the North is carried on. As Dr. Bonnafy is careful to state, the credit of initiating reform is due to the British philanthropists through whose efforts the pernicious "Dutch copers" were to a great extent banished from the neighbourhood of the fishing fleets. Our Mission to Deep Sea Fishermen is accorded generous and richly earned praise; but, as the writer explains, there is still ample room for the Société des Œuvres de Mer, whose cause he so warmly advocates. As long ago as 1819 the outfitters of all fishing vessels had to provide medicine chests, and when the strength of the crew exceeded 40 a qualified medical man had to be carried. By degrees, however, the shipowners succeeded in nullifying these beneficent ordinances, until finally in 1864 the strength necessary to entitle a crew to a surgeon was raised to 100, the post being

[1] Secours aux Marins des Grandes Pêches. Toulouse: Imprimerie Lagarde et Sebille, 1898, pp. 22.

thus practically abolished. In this unsatisfactory state matters remained up to 1892, when once more public attention in France was directed to the hard fate of the men engaged in the fishing industry. Several minor reforms were at once instituted, and in 1895, under the auspices of the above-named society, the despatch of hospital ships after the English model was decided on. Since then three sailing vessels have been equipped, each making up 30 beds, but the society has had to contend with a series of misfortunes which would have discouraged less strenuous workers. The first hospital ship, the *Saint-Pierre*, was totally wrecked in Placentia Bay. Her sister ship, the *Saint-Paul*, was driven on the rocks at Reykiavik; while the *Saint-Pierre No. 2* had a serious collision with a fishing smack soon after her arrival at the scene of operations. Happily no lives were lost in these deplorable accidents, and in spite of them the society, as Dr. Bonnafy puts it, is running fairly before the wind. In addition to the two renovated hospital ships "family houses" have been established on shore, in competition with the *cabarets* or grog-shops, and are a great success.

THE EARNINGS OF MEDICAL MEN IN FRANCE.

M. HENRI BÉRENGER discourses in the *Revue des Revues* more or less pleasantly, but apparently with authority, on the Intellectual Proletariat in France. Here are some of his observations referable to the medical profession. There are in the whole of France, inclusive of Corsica but excluding Algeria, between 12,000 and 13,000 practising medical men, of whom 2500 live in Paris, the remainder being distributed throughout the provinces. As regards the metropolitan practitioners the following is the approximate scale of earnings: 5 or 6 earn between £8000 and £12,000 per annum, from 10 to 15 earn about £6000, 100 earn £2000, 300 earn between £600 and £1200, 800 earn between £320 and £600, 1200 earn less than £320. Of the 10,000 provincial practitioners not more than half make a decent livelihood. Every year the various universities turn out about 1200 qualified doctors of medicine. The average duration of a practice may be set down as between twenty and twenty-five years; it follows, therefore, that the production is twice as great as the demand. M. Bérenger's statistics may be correct, but apparently he neglects to make allowances for the young medical men who are absorbed each year in the army, navy, and colonial services. 10,000 practitioners for the whole of provincial France seems, moreover, to be anything but a liberal estimate, seeing that the number on the British Medical Register is at least three times greater.

TOXIC EFFECTS FROM THE USE OF CARBOLIC ACID.

TOXIC symptoms have occasionally resulted from the use of carbolic acid as an antiseptic. At a recent meeting of the Société Médicale des Hôpitaux Dr. M. J. Comby related the following case. A child, aged five years, was treated for otorrhœa with carbolic acid. Injections of 1½ per cent. were employed six times a day; after the last injection in the evening five drops of glycerine of carbolic acid (5 per cent.) were instilled and in addition the ear was bathed with the first solution. This treatment was scrupulously carried out for ten days, when the otorrhœa ceased. But two days afterwards the child had persistent hæmaturia and headache. Careful physical examination revealed no other signs of disease and the general condition was satisfactory. Symptoms of acute nephritis—pyrexia, œdema, &c.—were absent; there was no evidence of tuberculosis and the microscope showed that the case was not one of hæmoglobinuria. Dr. Comby therefore concluded that the hæmaturia was due to poisoning by the carbolic acid which had been so sedulously used. The hæmaturia ceased in about a fortnight. Carbolic acid should be carefully used in the case of children, as they are especially susceptible to it.

THE TRANSMISSION OF DELETERIOUS MATTER BY POST.

THE following notice has been issued by the Post Office:—

Deleterious liquids or substances, though otherwise prohibited from transmission by post, may be sent for medical examination or analysis by registered letter post under the following conditions:—

Any such liquid or substance must be enclosed in a receptacle hermetically sealed, which receptacle must itself be placed in a strong wooden, leathern, or metal case in such a way that it cannot shift about, and with a sufficient quantity of some absorbent material (such as sawdust or cotton-wool) so packed about the receptacle as absolutely to prevent any possible leakage from the package in the event of damage to the receptacle.

The packet so made up must be marked "Fragile with care," and tendered at a post-office for transmission by registered letter post. It must on no account be dropped into a letter-box or sent by parcel post. These regulations will be rigidly enforced. Any postal packet of the kind found in the parcel post or any postal packet of the kind, whether registered or not, found in the letter post not packed as directed will be at once stopped and disposed of as the Postmaster-General shall direct.

Any person who sends by post a liquid or substance for medical examination or analysis otherwise than as provided by these regulations is liable to prosecution even if he be a patient sending something to his medical adviser for his opinion, or a medical practitioner sending something to a laboratory or elsewhere.

No liquid or substance of the kind may, under any circumstances, be sent by post to or from any place outside the United Kingdom.

We can ourselves testify to the need that there is for such regulations as the above. It is by no means unusual for samples of matters, both fluid and solid, to reach us packed in an exceedingly careless manner and more than occasionally the containing vessel has perished in the transit, not only to our loss, but also to the damage presumably of other parcels in charge of the Post Office. Many medical men have had the same experience, for specimens transmitted by patients for analysis or microscopical examination are, as a rule, ill-packed, but now that official notice is taken of the matter we have no doubt more care will be taken.

NURSING IN WORKHOUSE INFIRMARIES.

IF it be true that we have the poor always with us it is no less true that the question of their proper care and nursing is a perennial problem which so far seems incapable of solution. At the meeting of the Aylesbury Board of Guardians, held on August 10th, the medical officer, Mr. T. G. Parrott, attended to give reasons why trained nurses should be obtained for the workhouse infirmary. He gave it as his opinion that though he had no complaint to make against the present nurse, yet her standard of nursing was not very high and he considered that a trained nurse would be very desirable. He allowed that there were no cases at present under his care which required trained nursing and also that he knew the master had powers in case of emergency to secure better nursing. The chairman said he could quite understand the medical officer advocating trained nursing, it was only natural that he should be in favour of it as it afforded a good opportunity for someone to help him in his work. It was very kind of the Local Government Board to order things, but that body did not have to pay for them. After a great deal more discussion Mr. Locke moved the following proposition: "Considering that the present nurse has been nursing in the house for three and a half years, and as

no complaint has been made, in the opinion of the board the nursing in the house at present is all that is required." This was carried by 16 votes to 5. We consider this a most unsatisfactory result. It is perfectly obvious that in any place where the sick are gathered together away from their friends or relations proper trained nursing ought to be provided for them. The treatment of the poor under the Poor-law has been more or less of a scandal ever since the Poor-law came into operation; the grosser evils have been removed to a certain extent but still much remains to be done, and until some practicable scheme of separating the deserving poor from the profligate, the idle, and the loafer is devised scandals will continue to exist. But sickness is the same and as hard to bear in every class and the sick must be carefully tended.

THE FUNCTIONS OF THE STOMACH.

IN a short article contained in the fourth volume of the *Travaux du Laboratoire* of M. Richet an account is given by MM. J. Carvallo and V. Pachon of experiments they have made with a view of determining whether some of the functions of the stomach, and in particular its chemical, peptic and antiseptic functions, can be vicariously discharged by other parts of the digestive apparatus without detriment to the organism generally. The view that such supplementary action could take place was held by various observers, as by Czerny and Kaiser, and by Filipi and Monari, for they found that dogs from which the stomach had been almost completely removed, survived. Ludwig, however, showed that at least in Czerny's dog an important part of the cardia remained. Ogata, however, endeavoured to demonstrate the correctness of Czerny's conclusion by occluding the stomach and introducing the food through a pyloric fistula but even this experiment is not quite satisfactory since the retention of the stomach in the organism may modify, directly or indirectly, the chemical activity of the intestine, besides which the animals do not long survive so serious an operation. MM. Carvallo and Pachon, finding that the anatomical disposition of the stomach in the dog rendered that animal inappropriate for the operation of complete ablation of the stomach, determined to try the cat, and have satisfied themselves that for this particular experiment the cat is to be greatly preferred to the dog. Nevertheless, a large proportion of the cats operated on died, many from lung troubles the cause of which was at first obscure but which careful examination demonstrated to be due to septic infection proceeding from the points of suture. They were, however, able to present to the Société de Biologie a young cat from which the stomach had been entirely removed, and which had not only increased in weight three and a half months after the operation but was able perfectly to digest proteids in the form of cooked meats, starches, and fats. The digestion of raw meat was less perfect. They specially draw attention to the indisposition of both the dog and the cat to take the trouble of feeding themselves after the operation and they believe that the stomach plays an important part as a peripheral sensory organ.

THE STANDARDS OF PURITY FOR SEWAGE EFFLUENTS.

A TIMELY and valuable contribution upon this subject has recently been communicated to the Society of Public Analysts by Mr. C. G. Moor. The paper is all the more valuable because it shows that the writer possesses a practical experience of the subject and an ability to deal with both the chemical and bacteriological sides of the question. As he very properly remarks, purification of sewage so far as it is contemplated by any existing scheme can only be regarded as a chemical process, and it is in terms of chemical determination alone that the results of any process for effecting it can be expressed. Though we are learning now how great is the power of bacteria not only to purify but to utilise sewage, still the bacteria so involved are merely means for applying biological energy in place of the chemical energy previously employed, and are used for the precisely identical purpose of altering the sewage in its chemical composition from a substance highly favourable to the growth of putrefactive and some other organisms into a substance not specially favourable and perhaps ultimately inimical to their growth. Hence the corollary that the only terms in which a standard of purification for a process or a standard of permissible impurity in an effluent can be expressed, are necessarily and solely chemical. This does not depreciate the function of bacteriological examination, which might be directed to the determination of the extent to which effluents favoured or impeded the growth of undesirable organisms, and in particular those which directly cause disease and those which produce offensive organic substances. Such investigations cannot be without value in throwing light on the sewage purification by bacterial agencies, but, as Mr. Moor maintains, it is, after all, in quantitative terms of the chemical products which varying bacteria and varying conditions produce that the results of bacteriological investigation must be expressed before they pass over from the domain of experimental science into that of practical application. He accordingly suggests the following standard as satisfactory for general use: total suspended matter (not to exceed), 2·0 parts; albuminoid ammonia, 0·2 part; oxygen absorbed, 0·75 part; total hardness, 25·0 parts; and nitrogen as nitrates (not to be less than), 0·75 part per hundred thousand. Mr. Moor insists upon this amount of nitrates as showing that true purification has begun and that there is a store of oxygen which could be drawn on as a guarantee against possible putrefaction. We believe these figures are based on the analytical results of a great number of effluents which being within these limits are satisfactory, but obviously it would be difficult to make such a standard universally applicable. So much depends upon the nature of the sewage to be dealt with and as to the fate of the purified effluent. It might be satisfactory to discharge an effluent of a high degree of purity into a stream which is a source of supply for drinking purposes, while it would not be essential for an effluent to be so far purified when it is to be discharged on land or into a ditch. The suggestion to supplement the tests by observing the effect of the effluent upon live fish is, we think, an admirable one and one which, if it prove satisfactory, would be convincing of the innocuous character of the discharge.

THE OCCURRENCE OF THE TYPHOID BACILLUS IN THE EXCRETA.

THE July number of the *Medical Chronicle* contains the results of a research undertaken by Dr. J. R. Carver at the suggestion of Professor Delépine, its object being to obtain additional evidence as to the presence of typical typhoid bacilli in the fæces and urine of typhoid fever patients and if possible to suggest some explanation of the apparent disagreement of writers on the subject. The investigations were conducted in the bacteriological laboratory at Owens College and most of the material was obtained from the Monsall Fever Hospital, Manchester. He examined 16 specimens of urine and 20 of fæces all from separate patients presenting typical symptoms of enteric fever. In the examinations of the fæces inoculations of two or three loopfuls were made from the liquid stools into peptone bouillon, and this served as a stock tube. From this inoculations were made into tubes of phenylated bouillon (Parietti's solution) of various strengths. From these cultivations were made into ordinary shake gelatine plates,

while stroke cultures were made on potato gelatine. He afterwards adopted the method of direct inoculation from the stock bouillon tube into tubes of gelatine peptone bouillon which were then poured out into Petri plates. Some inoculations were also made on spleen gelatine prepared with fresh bullock's spleen. The result was that with the 20 specimens of fæces he found typical typhoid bacilli in only 2 cases. In 8 others he found a bacillus which gave some of the reactions both of the typhoid bacillus and of the bacillus coli and which he accordingly called the "intermediate" bacillus. In the 16 samples of urine he found only 1 colony of typhoid bacillus, and even this one was doubtful. On the other hand he found a coliform bacillus in 8 cases out of the 16. It was somewhat larger than the one usually found in the stools, but after some growths on agar they were indistinguishable and their reactions were similar.

THE NEW VACCINATION ACT.

A CIRCULAR has been issued from the Local Government Board to the clerks of the various boards of guardians pointing out that although the Act in its entirety does not come into force until Jan. 1st, 1899, the provisions of Section 2 became law on the passing of the Bill. This section contains the much-discussed conscience clause.

THE WORKMEN'S COMPENSATION ACT: A CIRCULAR LETTER TO THE MEDICAL REFEREES.

A CIRCULAR letter has been sent by the Home Office to the medical referees enclosing copies of the various official forms which will have to be filled up in the working of the Act and calling their attention to the dual nature of their duties. The first and most important function of a medical referee is to act as adviser to arbitrators or judges; but he has a second responsibility bringing him into relation with the injured workman rather than with any court or committee of arbitrators which it will require considerable tact and judgment properly to discharge. Schedule 1 (11) of the Workmen's Compensation Act runs as follows:—

"Any workman receiving weekly payments under this Act shall, if so required by the employer, or by any person by whom the employer is entitled under this Act to be indemnified, from time to time submit himself for examination by a duly qualified medical practitioner provided and paid by the employer, or such other person; but if the workman objects to an examination by that medical practitioner, or is dissatisfied by the certificate of such practitioner upon his condition when communicated to him, he may submit himself for examination to one of the medical practitioners appointed for the purposes of this Act, as mentioned in the Second Schedule to this Act, and the certificate of that medical practitioner as to the condition of the workman at the time of the examination shall be given to the employer and workman, and shall be conclusive evidence of that condition. If the workman refuses to submit himself to such examination, or in any way obstructs the same, his right to such weekly payments shall be suspended until such examination has taken place."

The Home Secretary in his letter reminds medical referees that he is not empowered by the Act to make any regulation as to the mode of carrying out this duty, but that care must be taken by the medical referee not to give the certificates in any circumstances other than those specified in the Act. The fee for the examination and subsequent certificate is payable not by the Treasury but by the workman himself, who, says the Home Secretary, "may be required to pay a reasonable fee before the examination is made"; but the referee is asked to remember in determining the amount of his fee that it is the workman who has to pay it and that only in some cases will he be able to recover it from his employer later. This second duty of the medical referee, if not so important as his main duty of acting as a judicial assessor, is certainly a very delicate one. He will be sitting in judgment, perhaps, upon the diagnosis of a professional brother.

MILK AND INFANTILE MORTALITY.

A PAPER by Dr. Lemière which is quoted in the *Journal de Clinique et de Thérapeutique Infantiles* discusses the relation long since recognised as existing between milk-supply and infant mortality. The statistics given are chiefly those of the city of Lille. Among other points of interest noted by the writer is the fact that the death-rate under two years of age in that city is 398·6, and in one parish it has risen to 520, for every 1000 deaths recorded. A large proportion of these is attributed to gastro-enteritis, which is most prevalent in districts inhabited by the working classes, the comparative mortality between a rich and a poor district selected for illustration being as 1 to 7. Gastro-enteritis is, as a rule, a preventable disease and this fact is fully admitted in the article to which we have referred. It is satisfactory to find that its explanation is sought for where it is most likely to be found—namely, in the diet administered. With regard to this Dr. Lemière makes two practical observations—one in which he accuses the employment of watered milk as a cause of malnutrition and the other in which he advocates efficient sterilisation and general care in feeding. Too much importance can hardly be attached to these remarks, especially during the present sultry weather. It is true that they teach nothing new, but they remind us of precautions which should never be but constantly are forgotten. We do not dispute the influence of subsoil water as a factor in the production of infantile diarrhœa, but we recognise as of equal and even greater importance the quality of the infants' milk-supply. The former consideration is in a great measure *ultra vires*, the latter is at all times within our control. If this control is applied with judgment and vigour the climatic and subterranean evils may often be entirely counteracted. Nothing, therefore, in domestic management is more important than care in the selection of the milk used and in its after-treatment. The health of the cattle producing it, of the people who sell it and the cleanliness of persons and vessels connected with its sale are as much the concern of a nurse or mother as is its actual preparation for the infant. As a rule mothers in this country understand the importance of cleanliness in all the manipulations of artificial feeding. Nevertheless they are frequently in error. They are very apt to under-estimate the value of fresh air, especially at night, and many an infant is poisoned with milk which has fermented in a close bedroom. We need hardly impress upon medical practitioners the necessity of instructing their patients in this matter and also with regard to the means adapted for the ready sterilisation not only of milk but also of the vessels in which it is contained and administered.

THE SILENT STRAND.

THE Strand without bustle and activity is no longer the Strand. By a ukase issued last week the Strand has been closed for traffic and sure and certain signs of the paviour coming along were evident to everybody by the accumulation of black wooden blocks upon the pavements of this thoroughfare. At the time of writing the Strand is "up" and those whose business is conducted within its precincts begin to enjoy a respite from vehicular clatter and also from sundry other street noises. The relief is perhaps most marked to those who, like ourselves, are engaged upon literary work. The appearance of the great historic street, however, in spite of its usual distracting condition, is somewhat depressing. One thing is

clear and that is that the biggest factor in the vehicular traffic is the omnibus, and this is essentially the vehicle which carries people to and fro through London's great artery. Despite the drawbacks which result from the congested condition of a street by the enormous traffic passing along in both directions there can be little doubt that this fact, after all, possesses a hygienic importance. The air of the Strand is now quite stagnant, an observation which has been made by a good many who use the thoroughfare. The lumbering omnibus is a big vehicle and in proceeding down a street pushes a volume of air in front of it, thus establishing an important degree of circulation. Hence the much-abused omnibus serves, so to speak, like a plunger in a cylinder chasing air in front of it and inducing fresh air to take its place. This process going on in both directions must have an important influence on the air of London's streets, for so narrow are some of our thoroughfares that the air is hemmed in, but the voluminous omnibus in its onward course tends to stir this up and to obviate stagnation. So we have an important compensation, perhaps, for the evils arising from the employment of animal power in our streets. Oddly enough, the hundred-and-one other street noises seem to have disappeared with the diverted traffic, except, however, that perennial curse the newspaper boy, whose irritating cries are more in evidence than ever, being untempered by vehicular noise. But we are no longer worried beneath our windows with a most exasperating toy which is regarded as imitating the utterance of chanticleer. People in the country know well that when this is produced by the bird itself it is sufficiently disturbing, but when the cry of the early bird is imitated on a toy it is almost beyond human endurance.

LAWLESSNESS IN THE STREETS.

ON August 8th Mr. Massey Mainwaring asked the Home Secretary a question concerning lawlessness in the streets and received the following typical ministerial answer :—

"I have received representations from the vestry on this subject, but after making inquiries I was not satisfied that there was any such insecurity as was alleged or such a condition of lawlessness that the existing force of police in the district were unable to cope with it. In certain districts there is doubtless more street rowdyism than in others, due to the general character of the population, but as far as the police are concerned active steps are taken by them to suppress any disturbances and to arrest offenders. The matter is, of course, of some importance, and I shall not lose sight of it."

It used to be said that nothing would be done to prevent railway accidents until a director or two had been killed. Are we to wait until a Home Secretary has been garrotted or knocked down and severely kicked before the police are given some more valuable weapon than a truncheon and are authorised to use it or until magistrates can order some more suitable punishment than a paltry fine which is always paid by a whip round of the prisoner's friends? The one and only remedy is the "cat"; it is cheap and efficacious. It did away with garrotting in the "sixties" and everyone will remember how Mr. Justice Day broke up the "High Rip Gang" in Liverpool by the use of the same means. Fines are useless, and prison is far too comfortable for Hooligans. Gymnasia and "education" may affect the budding Hooligan but not the full-grown plant. Since the Home Secretary's Epicurean answer hardly a day has passed without a case of violent assault being reported in the daily press.

THE ADULTERATION OF COFFEE.

ON reflection we should not think that the method of adulteration about to be described is "new," for it seems to us that it offers some explanation of the wooden character of the coffee infusions which are commonly offered to the public in this country. Coffee affords a most excellent beverage, but nobody seems to be able to get it good, and this is probably the reason why the consumption of coffee is rapidly declining. But the material must, of course, be good and fresh, with all the aromatic oils preserved intact. We have heard that by coating the roasted berries with a thin film of gelatin the delicious aroma of freshly roasted coffee may be indefinitely preserved. But this step would be quite futile in view of the "new" adulteration. This consists in washing, colouring and drying the berries in centrifugal machines with sawdust, with the result that the crevices of the berries become filled with powdered wood which is said to make them of a fine white colour, and thus to enhance the market value of the product. This ingenious but immoral process is said to be carried on in Hamburg, Bremen, Antwerp, and Rotterdam, and we respectfully request our Customs authorities to keep a sharp look out on the consignments of coffee coming from these places in spite of the market value, as it is said, being thus enhanced.

THE DENTAL HOSPITAL OF LONDON.

WE are pleased to learn that the difficulties which have for some time hampered the action of the Committee of Management of the Dental Hospital of London have been overcome and that the contract with the builder for the new hospital is now signed. The building is to be finished in twenty months, and the fact that definite arrangements have at last been made must be very satisfactory to Lord Kinnaird and Mr. F. A. Bevan, the trustees, and Dr. Joseph Walker, the honorary treasurer, who have worked very hard to attain this end. We hope that the public will help forward the work by donations and subscriptions. So far the dental profession has contributed £7000 and the public about the same amount, while some £30,000 are still required to discharge the liabilities incurred. The Dental Hospital has a distinct claim on public generosity over and above the value of its work. Mortgage had to be incurred when the buildings on the new site were demolished two years ago by the order of the London County Council, while the hospital lost a revenue of £1200 a year, which sum the Committee of Management intended should accrue to help to pay for the new building.

NEW MEDICAL INSPECTORS OF THE LOCAL GOVERNMENT BOARD.

WE are informed that the two temporary medical inspectors to the Local Government Board who were sanctioned under the report of the Treasury Committee of August, 1897, have at last been appointed. The difficulties which have caused such long delay have been owing firstly to the fact that a permanent increase of work called for permanent and not temporary appointments, and secondly to the circumstance that when the appointments were at last offered it was naturally found that some of those nominated could not abandon permanent posts which they then held for the sake of temporary ones. At last, however, all difficulty has, for the moment at least, been removed. Dr. L. W. Darra Mair, the well-known medical officer of health of the Croydon Rural District, has obtained one year's leave of absence from his duties in order to accept one of the posts in question. The other post has been conferred by Mr. Chaplin on Dr. Ralph W. Johnstone. Both of the new inspectors hold the Diploma in Public Health.

A TELEGRAM from Hong-Kong was received on Monday morning last by the Colonial Office reporting that only one case of plague occurred last week.

A FORTNIGHT ago it was our sad duty to offer our sympathy to Mr. Henry Power in his sorrow and to-day we are reluctantly compelled to recount another terrible accident affecting a prominent member of the medical profession—namely, Sir Walter Foster, M.P., whose daughter while bathing at Woollacombe, near Ilfracombe, was carried away by a wave and drowned. While offering our sincere condolences to Sir Walter Foster we feel obliged to remind the local authorities that this is by no means the first case of drowning off the foreshore which has occurred in this district, and we think that better precautions should be taken to ensure the safety of bathers, although it is said that the cove where the accident happened is not a recognised bathing place.

DR. GEORGE ROPER, whose death occurred at Southwold on Sunday last, August 14th, was at one time physician to the Royal Maternity Society. We hope to publish a few notes on his life and scientific career in an early issue.

WE have received Dr. Whitelegge's report for the year 1897 as chief inspector of factories. We shall deal with the report in an early issue, as it is made specially interesting by the new Workmen's Compensation Act.

WE shall publish next week the concluding article of Dr. Lionel Beale's series entitled "Vitality."

PLASTER MODELLING: A DEMONSTRATION BY MR. G. A. PETERS, F.R.C.S.

ON Wednesday afternoon, at the Examination Hall, Victoria-embankment, an interesting demonstration of an original and improved method of making plaster-of-Paris models of anatomical and pathological specimens was given by Mr. George A. Peters, F.R.C.S. Eng., of Toronto. The process consists of a rapid method of making a paraffin mould from which a finely-detailed and sharply-defined plaster-of-Paris cast of the specimen can be readily produced.

The mould is obtained by means of an ingenious spray devised by Mr. Peters, the apparatus consisting of two tin reservoirs, one being a simple can containing iced water and the other a can constructed with an inner and an outer compartment so arranged that paraffin placed in the inner compartment can be kept in a molten condition by a jacket of hot water in the outer one, each reservoir being connected by rubber tubing to a double-channelled spray nozzle, the conduit for the paraffin being completely jacketed by an outer tubing containing hot water. The spray is produced by a strong current of air generated in an ingenious pressure air-pump by electromotive force. By means of this mechanism a fine spray of pure paraffin can be instantly produced and its flow readily regulated by means of an adjustable nozzle.

The specimen demonstrated upon by Mr. Peters was a dissected guinea-pig, and the *modus operandi* was as follows. The paraffin reservoir was charged with paraffin having a melting point of about 125°F. and the other reservoir with iced water. The specimen, placed on a mackintoshed dissecting board, was first lubricated with a spray of albo-line to prevent adhesion to the paraffin, the hairy regions for the same reason being also sprayed with an alcoholic emulsion of corn-flour. The paraffin spray was then put in action by switching on the electric current and a fine spray of pure paraffin was directed upon the dissected specimen, which was quickly covered with an even coating of the paraffin which immediately solidified on coming in contact with the surface of the specimen. The next stage was the application of a strong mixed spray of paraffin and iced water, which had the effect of accelerating the building up of a thick casing of firmly set paraffin. Over this a stiff paste of plaster-of-Paris, to which a watery solution of sulphate of potash had been added to promote setting, was spread to strengthen the mould. A few minutes were then allowed for the plaster to set, after which the cadaver was removed from the paraffin and the mould was ready for use.

Mr. Peters then showed several models which he had produced by this method, among them being a fine plaster cast of Dr. Sims Woodhead's head, a model of Professor Cunningham's hand obtained at the recent meeting of the British Medical Association at Edinburgh, and a model of a dissected guinea-pig obtained from a mould similar to the one made during the demonstration, which showed the fine anatomical features in minute detail, even to the blood-vessels of the mesentery. Other models were also demonstrated as examples of the applicability of the method to the modelling of furred animals and birds, the lecturer incidentally mentioning that a complete model of a living head could be obtained in about twenty minutes.

Among those present at the demonstration was Sir William Mac Cormac, President of the Royal College of Surgeons of England, who at the conclusion of the proceedings cordially thanked Mr. Peters for his demonstration and heartily congratulated him upon the excellence of his results.

ANNUAL REPORT OF THE METROPOLITAN ASYLUMS BOARD.

SECOND NOTICE.[1]

Medical Supplement.

THE medical staff of the Metropolitan Asylums Board includes many highly qualified men both as medical superintendents and as assistant medical officers, and it is of considerable importance that this should be the case since the circumstances of a fever hospital are very different from those of a general hospital. In this latter the visiting staff of leading physicians and surgeons guide and advise the resident medical staff, while in addition there is the stimulating influence of competition and publicity ever present. In the fever hospital, on the contrary, these influences are to some extent absent, and the institution is in large part self-contained. It is true that within recent years the admission of students into these hospitals has done something to modify this self-contained element; but nevertheless the officers are, by the very nature of their occupation, cut off in some degree from the outside world. It is for this reason, amongst many others, that we welcome the new departure which, commenced in the annual report of 1896, has become developed in the report for 1897 which is now before us.

The Statistical Committee have very wisely relinquished the task of editing the purely medical part of the report and have left it, we trust entirely, in the hands of the medical staff of the fever hospitals, who have appointed two of their colleagues, Dr. Caiger and Dr. Goodall, to edit the "Medical Supplement." We do not know precisely what is the method of compilation adopted; whether, for instance, certain members of the medical staff are invited each year to take up some subject and after having studied it to report thereon, or whether the contributions to the supplement are left in the main to the initiative of the medical officers and the revising control of the editors. But in all probability a judicious blending of these two methods is encouraged. Be this as it may, we welcome the supplement as a valuable innovation and as affording a great inducement to the medical staff to make more use than has been, perhaps, made in the past of the altogether exceptional opportunities afforded to them. It is to be hoped, too, that the committees of the several hospitals will themselves recognise the importance of encouraging original research amongst the medical staff and this they may do by satisfying themselves that the members of the staff are in no sense overworked. A medical attendant whose whole time is taken up in admitting cases and in attending too large a number of patients is not likely to be of the greatest use to the patients or to make the careful notes and observations calculated to add to our knowledge.

In the present supplement Dr. F. F. Caiger deals with the subject of complications and of the coexistence of infectious diseases as illustrated by the statistics of all the hospitals

[1] The First Notice was published in THE LANCET of August 13th, 1898.

during 1897. On the 15,241 cases of scarlet fever the incidence of otitis was 14·39 per cent., of albuminuria 8·87 per cent., of the adenitis of convalescence 5·59 per cent., of rheumatism 3·32 per cent., and of nephritis 2·80 per cent. Relapse occurred in 0·72 per cent. of the cases, diphtheria in 5·22 per cent., and varicella in 3·49 per cent. Among the 5493 cases of diphtheria albuminuria occurred in 42·19 per cent. and paralysis in 20·55 per cent., while 6·99 per cent. suffered from scarlet fever. In enteric fever 13·06 per cent. of the cases had a relapse, 9·9 per cent. hæmorrhage, 3·10 per cent. perforation, 2·4 per cent. pneumonia, and 1·9 per cent. non-perforative peritonitis. Among the 21,400 cases of infectious disease admitted into the Board's hospitals for acute infectious disease no less than 596, or 2·78 per cent. of the total admissions, were suffering on admission from two separate infectious diseases. By far the greater number suffered from a combination of scarlet fever and diphtheria, scarlet fever and varicella and scarlet fever and whooping-cough being the other associations most frequently met with. Those of our readers who take interest in this subject of the coexistence of infectious diseases in the same individual will find a very complete paper on it, also from the pen of Dr. Caiger, in vol. xiii. (new series) of the Transactions of the Epidemiological Society.

The incidence during 1897 of post-scarlatinal diphtheria on the 15,241 completed cases of scarlet fever amounted to 5·22 per cent., or 0·58 per cent. above that of last year. Dr. Goodall is careful to point out that the bacteriological examination of all suspicious cases has probably had considerable effect in bringing about this high incidence rate, and for this reason it would, he adds, be unsafe to compare the incidence on hospital treated cases with that upon the home treated cases. The total fatality-rate of the post-scarlatinal cases was 3·7 per cent., that of the laryngeal cases 3·7 per cent., and of the remainder 2·9 per cent. In 1896 the three rates just given were respectively 5·1, 22·7, and 2·8; and it will be seen that an enormous reduction has been made on the laryngeal cases. As regards the onset of these post-scarlatinal attacks of diphtheria the majority occurred during the fifth and sixth weeks following the onset of the scarlet fever, and the greatest percentage incidence of the disease was during the first and third quarter of the year. The figures for 1897 do not, Dr. Goodall thinks, shed any fresh light on this question of post-scarlatinal diphtheria, and he is evidently inclined to regard the increase within recent years as but an expression on hospital treated patients and the increased incidence of diphtheria on the population as a whole. It is, in a way, unfortunate that we cannot institute any satisfactory comparison at present between the home treated and hospital treated cases in this particular, as we might in course of time learn something from such a study. Obviously, the question is whether there is an *undue* incidence on hospital treated cases.

Coming now to the results of the antitoxin treatment of diphtheria during 1897 we find some encouraging figures which show improvement upon those for 1896. Of the total number of completed cases (5459) 80·2 per cent. were treated with serum, as against 66·2 in the previous year, and of the serum treated cases 20·4 per cent. died, as compared with 25·9 per cent. in 1896. In the laryngeal cases the fatality-rate was 30 per cent.; in the cases upon which tracheotomy was performed 39·9 per cent. In the year 1894—that preceding the introduction of antitoxin—the fatality-rate of all cases was 29·6, of the laryngeal cases 62 per cent., and of the cases on which tracheotomy had been performed 70·4 per cent. Perhaps, however, the best index of the valuable results of antitoxin is to be found among the post-scarlatinal cases of diphtheria occurring in hospital which have naturally a high fatality-rate, but which being easily recognised can be subject to antitoxin treatment at once.

Most of the other contributions to the "Medical Supplement" are, we presume, from the assistant medical officers, whom we are glad to see contributing their share; indeed, these officers have, perhaps, a better opportunity for original work than have the medical superintendents, no small portion of whose time must of necessity, if they are to govern the hospital in a satisfactory manner, be taken up with important administrative duties. Dr. Arthur Stanley's paper on the Condition of the Heart in Diphtheria is of a high degree of merit and betrays considerable observation and care at the bedside. He finds, too, that in persons dying from that terrible complication of diphtheria, cardiac paralysis, very distinct signs of degeneration are constantly found in the cardiac muscles, while he has been unable to demonstrate anything abnormal in the "immediate extra-cardiac nerves or nerve endings." Dr. A. Miller's contribution on the date of onset of the various forms of diphtheritic paralysis follows appropriately the foregoing. Of 392 cases paralysis appeared first in the palate in 185, and in the ocular muscles in 197. In the remaining 10 it commenced elsewhere. Of 102 cases of cardiac paralysis no less than 91 proved fatal. Dr. Richards and Dr. Goodall describe a case of enteric fever where an endeavour was made to counteract the effects of an intestinal perforation by laparotomy and suture of the gut, and the result, though ultimately fatal, is by no means discouraging.

Of the other papers we have space only to refer to that by Dr. R. G. Kirton on the Serum Diagnosis of Enteric Fever. He feels as a result of his observations (1) that "Widal's reaction" is usually obtained in cases of enteric fever, whether they be mild or severe, but that it is not obtained from cases suffering from other diseases, unless perhaps in those who have recently recovered from enteric fever; (2) that this reaction is obtained earlier in some cases than in others (three cases gave the reaction only on the second attempt); (3) that the blood retains its power of yielding the reaction for a variable time—it may be for a few months, perhaps for some years; and (4) that the blood taken after death from a case which has yielded the reaction during life may still continue to react.

A PATENT FOR DIPHTHERIA ANTITOXIN RECENTLY GRANTED IN THE UNITED STATES.

PROFESSOR BEHRING'S action in applying for a patent in the United Sates as sole inventor of diphtheria antitoxin excited surprise, but the announcement that the authorities at Washington have recently decided to grant the patent has caused a feeling of something like consternation among the American manufacturers of antitoxin. The medical profession too are up in arms against Professor Behring's departure from recognised professional ethics and many of the medical journals condemn in strong terms his unaccustomed mode of procedure. It was in January, 1895, that Professor Behring—his assignees being the Höchst-Farbwerke, the manufacturers of the serum in Germany—first applied for a patent for his diphtheria antitoxin; the application was then refused and has been refused four times since on the apparently substantial ground that Professor Behring was not the sole inventor of diphtheria antitoxin and had consequently no right to claim a monopoly of the manufacture and sale of the same. However, in June last the patent officials at Washington overlooked their objections and granted the patent, not because they thought that Professor Behring had established his claim by right of priority or by originality in research, or even on legal grounds, but for the sentimental consideration that the treatment of diphtheria by antitoxin had yielded such satisfactory results and had greatly decreased the death-rate from this disease. This altogether unexpected decision on the part of the United States Patent Office has given universal dissatisfaction amongst both medical men and manufacturers of antitoxin throughout America, as it is contended that it is neither logical nor just. Its opponents assert that before granting the patent positive proof should have been forthcoming that Professor Behring was undoubtedly entitled to the credit of discovering the principle of serum immunisation and of inventing diphtheria antitoxin and that to grant a patent for any other reasons was absurd as well as unfair to those scientific men who assisted in the successful development of serum therapy. Among the American papers which contain articles deprecating alike the action of Professor Behring in applying for a patent and that of the Patent Office in granting it, *Pediatrics* of August 15th, in its editorial comments, perhaps treats the subject most exhaustively from the point of view of the medical profession and of the manufacturers. Referring to the question from a scientific standpoint the above-named journal says: "We will first consider the matter from a scientific standpoint and endeavour to show that although without doubt

to Behring is due the chief credit for developing serum therapy, yet that this development has reached its present successful issue by progressive stages to which many earnest workers have contributed." A short sketch is then given of the discoveries of Salmon and Smith in 1886, Pasteur, Roux, Chamberland, Fox, and Bonhomme in 1887, and Frankel in 1890, tending to prove that much progress had been made in the development of the principle of serum immunisation before Behring and Kitasato published their results. *Pediatrics* concludes that Pasteur was undoubtedly the discoverer of the principle of serum immunisation, while to Roux and Aronson belongs the merit of first putting the serum to clinical uses, and comments on the fact that the French Academy of Sciences was so undecided as to which of the respective claimants was entitled to the credit of the invention of diphtheria antitoxin that they concluded that both Roux and Behring were equally deserving and awarded the prize jointly. Dealing with the ethical side of the question the same journal remarks: "Since Jenner introduced vaccination for the prevention of small-pox and thus rendered his name immortal there has been no discovery made in the realms of science more valuable than the principle of serum immunisation and no invention more efficacious in relieving and curing human disease than that of diphtheria antitoxin. ..... Although, as we have pointed out, no one man can lay claim with justice to the honour of the discovery for himself alone, nevertheless Behring has probably accomplished more than any other worker in the establishment of serum therapy. To him, too, has been accorded by far the largest share of the accompanying fame and it may be said that if he had not made this unfortunate departure from the accepted code of professional ethics his name would have been handed down to posterity linked with those of Jenner, Lister, and Pasteur. By his selfish attempt, however, to reserve to himself and the company with which he is connected the right to manufacture and profit by the sale of diphtheria antitoxin he has besmirched his reputation and lowered the dignity of the profession to which he belongs. That many of the pioneers in science do not reap a fair share of the harvest sowed and brought to maturity by the efforts of their brains and that they are often used as ladders by which unscrupulous men of superior business capacity ascend to position and fortune cannot be denied. A discoverer or inventor is most assuredly entitled to an ample portion of the rewards resulting from the success of the child of his intellect and we are certain that no one would begrudge Professor Behring the highest possible pecuniary rewards, but at the same time we cannot but think that by placing an invention of the nature of diphtheria antitoxin within the category of a patent medicine and by attempting to create a monopoly of a discovery which belongs by right to the whole human race he has deviated from the best traditions of scientific ethics and has pursued a course which he will live to regret." After making a brief reference to the spirit of commercialism prevailing in Germany at the present time *Pediatrics* ends by regretting that the patent laws of the United States are so criminally lax and says: "Before leaving the subject of Behring's patent it may be as well to make a few remarks in regard to the patent laws of this country. The fact is well known that any like application would meet with prompt and final refusal in every other country of the world. Indeed, no sane person would have the simplicity to apply for legal protection for an article of the nature of antitoxin in any land but the United States, convinced beforehand that the attempt would be useless. In France and Germany so strict and exclusive are the patent laws that even foods and medicines save on processes of manufacture cannot be protected. Does it not therefore seem an absurdity and injustice as well as a slur on the proverbial American cuteness that foreigners are allowed to enjoy privileges here which they are unable to obtain in their own countries? It should also be borne in mind that in this respect 'they manage things better on the other side.' We are too apt to think that all our institutions are superior to European ones, but there can be no doubt but that in matters of this kind we are far too lax and might with benefit to ourselves take a leaf from the book of our German and French friends. Reform in our patent laws is urgently called for." Although Professor Behring has succeeded in gaining a patent for his diphtheria antitoxin it is the intention of the American manufacturers of antitoxin and the several boards of health to contest his right to create a monopoly at every step.

THE SPREAD OF DISEASE THROUGH LAUNDRIES.

IN THE LANCET of August 18th, 1877, we published a report of a Special Commission on the Spread of Disease through Laundries. We then demonstrated in so conclusive a manner how linen was contaminated, more especially during the process of ironing and drying after washing, that the Press of the entire country took up the question. So much alarm was occasioned by this discussion that in the course of a few weeks five companies were founded so as to establish sanitary laundries in which the dangers which we had denounced might be avoided. Since then many other similar enterprises have been started and in almost every important centre in England there are one or more laundries which at least profess to wash linen on sanitary principles. We very much doubt whether the precautions which these establishments profess to take are always efficient. Still, it is a step in the right direction to find that the necessity of precaution is widely admitted. The agitation thus started in England has travelled abroad and in Paris and Berlin notably there are several large hotels which make it their boast never to give or to allow linen to be given out promiscuously to be washed. These establishments have their own steam laundries where the linen washed cannot come into contact with any outside linen. In a general way, however, the problem has been considered in France from the point of view of the laundresses themselves rather than from the standpoint of the public at large. During the recent prevalence of cholera in Europe several epidemics originated in laundry establishments and the first victims were washerwomen. Subsequently, at a sitting of the Paris Municipal Council held on Nov. 15th, 1896, M. Marsoulan brought forward the question of laundries and the diseases which laundry women contracted by manipulating foul linen. The council adopted a resolution in favour of studying the means which might be taken to mitigate this danger. Following upon this Dr. G. Deschamps, Médecin Inspecteur du Service des Epidémies, was appointed to draw up a report on the subject. On its side, the Council of Hygiene and Salubrity of the Department of the Seine, in its sitting held on Oct. 29th, 1897, elected a Commission consisting of Dr. Proust, Dr. Yangfleisch, Dr. Brousse, Dr. Le Roy des Barres, Dr. Dagnet, and Dr. Vallin to likewise investigate the matter. Dr. Vallin was the reporter of this Commission and he concludes in his report that laundresses obviously run considerable risk of contracting infectious fevers from the dirty linen. Where compulsory notification and disinfection for such complaints is strictly enforced this risk is of course in a great measure dissipated. But it is also acknowledged that there are still some families who conceal the presence of infectious disease. Though in Paris such linen would be disinfected gratuitously, still there are persons who will not apply to the sanitary authorities: they fear that the linen may be spoilt in the process of disinfection or it is so dirty that they are ashamed to show it.

At first linen soiled with blood, &c., was undoubtedly spoilt by the process of disinfection. The heat, by coagulating the albumin, fixed the colouring matter and the linen was permanently stained. But now, and indeed for some ten years past, all linen thus stained is rinsed and brushed before it is placed in the disinfecting stove. Dr. A. J. Martin, Inspector-General of this service, states that this preliminary operation is carefully supervised and quite successful both from the point of view of preventing stains and of preventing infection. But even if in regard to the more serious infectious diseases proper precautions are taken, there remain cases of measles, tuberculosis, septic suppurations, blennorrhagic discharges, syphilitic secretions, and premonitory diarrhœa, for which no notification is sent to the sanitary authorities and disinfection is not enforced.

The most dangerous operation is the sorting and marking of the linen before it is washed. In large model laundries this is, or at least it should be, done in a special separate department, room, or shed. But even then the germs are disseminated, infect the persons who sort the linen, and may be conveyed to some distance by the wind. Dr. Vallin suggests that the dirty linen might be sorted under an antiseptic spray. At the same time he doubts whether the laundresses

would give themselves the trouble to take these precautions properly. In some large model laundries there is an automatic disinfecting washer. It consists of a revolving perforated case inside a cylinder. This case or drum is divided into several compartments. In each compartment a bundle of dirty linen as received from the customer is introduced without being sorted. The apparatus is now closed, the case made to revolve, and a current of cold water discharged upon it so as to remove the blood-stains, and this is followed by tepid water. When this has been done the linen can be purified by boiling water or jets of steam under pressure, the heat varying from 110° to 120° C. It is only after this process is terminated that the linen is taken out and sorted. Such an operation certainly reduces the risk to a minimum. The report of the Commission of the Council of Hygiene concludes by recommending that every effort should be made to induce families to send their linen to the public disinfecting stations, where it will be purified gratuitously and in no wise injured. Then it is urged that all dirty linen should be conveyed in air-tight special sacks, that the linen should be sorted under an antiseptic spray in a separate and special place or shed, and that in large laundries there should be a special apparatus for blood-stained linen where it can be soaked in tepid alkaline water before it is sorted.

Dr. E. Deschamps, in his report, deals particularly with the smaller laundries and the practical difficulties in the way of effective reform. He points out that in spite of the danger of infection to which they must be constantly exposed pulmonary tuberculosis is comparatively rare among washerwomen. This raises an interesting question as to whether this immunity is due to the deterring effect which the dampness prevailing in laundries may have on the tubercle bacillus or whether it arises simply from the fact that laundry-women must possess a certain amount of physical vigour to do their work. With regard to infection through linen amongst the poorer classes in Paris, many women wash their own linen, and if there is infectious disease in their family this operation does not add considerably to the danger to which they are already exposed. Others get their linen washed by a friend and neighbour who would certainly know if there was any illness and could take precautions. The greatest danger arises with the lower middle classes, who give out their linen to small laundry establishments in the immediate neighbourhood. In that case it is generally the mistress and not the servant who sorts and gives out the linen. The mistress would very likely conceal the fact that some member of the family was ill fearing that the laundress might charge extra for washing the linen on the ground that special precautions had to be taken. The linen is taken probably to a very small laundry shop in a crowded thoroughfare; it is sorted in the same room where later in the week it will be folded and ironed. These small laundry shops must be centres of infection and to expose clean linen in such places is certainly dangerous. On the other hand, to classify them as unwholesome industries and to decree that no linen shall be washed except in a large model laundry would throw out of employment an enormous number of very worthy people and make all laundry work a monopoly held by a few large capitalists.

Another point raised is the danger to the public due to the fact that linen stained with blood, pus, &c., must, first be soaked in cold or in tepid water. What becomes of this water? It must often contain pathogenic germs. In certain localities it may be a fruitful source of river pollution. The best protection, according to Dr. Deschamps, will be the strict enforcement of compulsory notification and disinfection in all cases of infectious disease. In this respect we are more fortunately situated in England, where both law and custom favour this practice. Nevertheless, the law is still too frequently evaded and, as already pointed out, there are cases which do not come under its provisions. Both Dr. Vallin and Dr. Deschamps repose far too much confidence in the effect of compulsory disinfection. Such laws as they desire are in force in England and were in force when our report on the spread of diseases through laundries was published. Nevertheless, we clearly demonstrated how linen was set out to dry close to cases of small-pox and that the law was constantly evaded. The only radical remedy is the abolition of pettifogging laundries. A private dwelling or a small shop in a street is not a place where a laundry business can be carried on under safe and wholesome conditions. On the other hand, and so that the trade should not be monopolised by large capitalists who alone can build model steam laundries, public washhouses should be so constructed as to serve the same purpose. Here those who do washing on a small scale should find all the necessary conveniences and be made to carry out those precautions which are best calculated to protect them and their customers from the danger of infection. The French reports confirm our report and show that laundry work as a home industry cannot be carried out safely. But the French reports only utilise this fact as an argument in favour of compulsory notification and disinfection wherever there is a case of infectious disease. This we are convinced will not suffice, and as we are, like our French colleagues, anxious not to ruin laundresses who have only small businesses we repeat that these small businesses should be transferred to improved public washhouses. In the meanwhile the most practical result of the reports published by the Paris sanitary authorities is a more extensive use of air-tight sacks in which the dirty linen is conveyed.

Public Health and Poor Law.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Halifax Urban District.—An instructive little milk-borne epidemic of scarlet fever occurred in this district in 1897. A sudden excess of notifications of this disease having been observed inquiries were set on foot as to the cause. All who were affected were found to be deriving their milk-supply from one or other of two purveyors, one being merely a dealer, the other a farmer who supplied milk directly and also through the dealer. At the house of the dealer no clue was discovered, but on visiting the farmer Mr. D. Ainley (the medical officer of health) found a boy with a well-developed rash and sore-throat moving freely about the premises and amongst the cows. The farmer himself was in bed with a sore-throat and his wife showed signs of desquamation, while an elder son, aged nineteen years, who took the milk into the town, had also a sore-throat. It was arranged that the milk should have no connexion with the farmhouse or with the infected persons, but it was not under the circumstances thought necessary to prohibit the supply. A list of customers was obtained from the two purveyors and the medical officer of health visited every one of them. By this means a considerable number of cases was discovered. It is to be inferred that the potency of the milk for harm was removed when the sources of infection were cut off.

Northamptonshire County District.—We heartily welcome the appearance of this, the first report of Mr. C. E. Paget, the first county medical officer of Northamptonshire. Mr. Paget, whose interesting reports on the health of Salford we have noticed for many years, only took up his new duties on Jan. 1st, 1898, so that, as he tells us, he knows little from personal observation of the sanitary condition of the county. The annual reports from the district medical officers of health were sent in with promptitude, but, as has been the case so frequently before when a county medical officer has entered on his duties, only four of those relating to the urban and six to the rural districts were printed. Doubtless, however, Mr. Paget will soon effect a change here. The estimated population of the county is 228,955, 99,878 of whom are living in urban districts. The birth-rate of the administrative county during 1897 was 29·5 per 1000 (urban rate 33·4, rural 26·4); the general death-rate was 15·5 (urban 14·7, rural 16·09). The infantile mortality for the county was 134 per 1000 registered births (urban 142, rural 125). Several of the sanitary districts are without the benefits of notification, and amongst these we notice the borough of Brackley, while some eighteen districts are without any hospital provision and others have it only "by arrangement." In short, Mr. Paget has an admirable field for his energies, and we shall watch the progress of the county with interest.

Huddersfield Urban District.—In investigating the circumstances attendant upon certain cases of puerperal fever notified to him during 1897 Mr. E. G. Annis, the medical officer of health, states that on visiting the midwife's home he generally finds the conditions "absolutely indescribable; evidences of neglect, dirt, filth, and a general squalid condition abound." He points out that about one half of the children born in Huddersfield are introduced into

the world by midwives and he thinks it very necessary that some control over these women should be exercised. He has done well to call attention to the condition of their homes. New regulations as regards cowsheds, dairies, and milk-shops have been recently brought into operation in Huddersfield, a minimum of 500 cubic feet being the allowance for each cow. It is further suggested that every cowkeeper shall arrange with a veterinary surgeon for the periodical inspection of the cows. We also note that "no milkman with his can should on any account enter the houses of his customers."

Birkenhead Urban District.—The inhabitants of this borough will hear with satisfaction, in face of recent outbreaks of water-borne diseases, that their water-supply "is of exceptional purity and altogether most satisfactory from the public health point of view." It is obtained from the new red sandstone at three separate pumping stations, the average depth of the wells being 207 ft. The supply yields 17 gallons per head per day. Some interesting figures relative to tuberculosis in edible animals are furnished by Dr. Sydney Marsden in his report. Of 3655 cattle slaughtered in the Tranmere abattoirs from 1892 to 1897, 82 were affected with tuberculosis; and if we read the tables correctly, nearly the whole of those thus affected came from Cheshire and Wales. Of 4174 pigs killed, presumably in 1897, 57 had tuberculosis; but of 10,500 sheep and lambs slaughtered during the same period not one was thus affected. Of 626 calves killed 3 had tubercle. Out of 241,717 cattle *inspected* at the Woodside and Wallasey lairages during 1897 113 were affected with tuberculosis; 12 of these came from the United States, 18 from Canada, and 83 from South America. As an instance of the difficulty found in practice in carrying out an improvement scheme for the housing of the working classes we may refer to the case of Birkenhead. In 1896 a provisional order relating to the area in question was confirmed by Parliament, but up to the date of the issue of the report now before us not a stone had been touched.

Nottingham Urban District.—Amongst the Jubilee honours of 1897 the town of Nottingham occupied no mean position, and the bestowal on it by Her Majesty of the title of "city" evidently gave much justifiable satisfaction to the inhabitants. Despite the advance which has been made in the sanitation of Nottingham within recent years there are still, Dr. Boobbyer tells us, no less than 40,000 pail-closets to be dealt with, and he regards the danger to health from these receptacles as but little less than that from privies. As he points out, it is the abuse to which the pail is liable which in the main reduces it to a condition little better than the privy. As to the incidence of enteric fever in houses supplied respectively with privy, pail, and water-closet the figures presented by Dr. Boobbyer in his last report and repeated in the one now before us are well worth quoting. He found that for the years 1887–96 the figures yielded the following incidence of enteric fever. Midden-privy houses, 1 case in 37 houses; pail-closet houses, 1 case in 120 houses; water-closet houses, 1 case in 558 houses. He also supplies other figures in reference to these classes of houses tending to show that the danger of infection from a given case of enteric fever is much greater in privy and pail-served houses than in those with water-closets, while the risk of the recurrence of the disease is also greater. It is important to mention that the water-closets are scattered promiscuously amongst those of the conservancy type and hence no question of locality or class distribution is sufficient to account for the differences observed. In connexion with the Bagthorpe Isolation Hospital there were 14 "return" cases of scarlet fever and certain of these may have owed their origin in some way or other to 10 discharged patients. The average duration of stay in hospital had been over 12 weeks and we do not gather that any of the patients were suffering from chronic discharge. Isolation accommodation has been provided during the year for cases of enteric fever and good results seem to have been attained thereby. In an appendix to his report Dr. Boobbyer gives the report of a deputation of the sanitary committee which he accompanied to Essen and Cologne for the purpose of inspecting certain knackeries and abattoir buildings there. As Dr. Boobbyer aptly remarks, the report shows "that our rivals of the Fatherland spare no trouble and expense in safeguarding their meat supplies and organising upon the most sanitary and economic bases the very numerous subsidiary industries arising in connexion with their preparation."

Bristol Urban District.—In November of last year the limits of this city were so extended as to embrace a population of 318,042, but the statistics of the present reports, which are illustrated by means of a series of very clear diagrams, relate to the old population of 232,242. Bristol is apparently much to be congratulated upon its water-supply, despite the fact that the supply is in the hands of a private company. The water, according to Dr. Davies, "appears to be above suspicion" as regards its risk of excremental contamination. The bacteriological examination of cases of diphtheria and the application of Widal's test for cases of enteric fever are still pursued at Bristol, and we trust they will be continued. It is, however, easy to understand what a heavy task this laboratory work must entail upon Dr. Davies, more especially in presence of the increased work and reponsibility which the added area and the appointment of five additional inspectors must involve. It is to be hoped that this necessary bacteriological work will be provided for and that it will not be allowed to drop. Dr. Davies does not advise any alteration as regards sewer ventilation in Bristol. Our readers may remember that the Bristol sewers are not ventilated. Such ventilation can, he observes, be asked for either to prevent danger to health or to prevent nuisance, and there are no indications, he thinks, for action in either direction. He regards the "suggested danger of 'fever' outbreaks from the unventilated condition of the sewers as purely chimerical." In referring to small-pox a note of warning as to isolation accommodation is uttered. It is pointed out that it is the generally well-vaccinated condition of the infantile population which renders isolation possible as a controlling factor in small-pox, but were Bristol an unvaccinated town—and we fear that it is tending to become so—a thousand beds would, Dr. Davies observes, soon become full and what would be practically chaos would reign, assuming that small-pox of an epidemic type were to invade the city. There is included in the volume before us the report which Dr. Davies made upon the Clifton outbreak of enteric fever in 1897, but as this outbreak has received considerable publicity already it is hardly necessary to refer to it further here. A paper upon it was read before the Epidemiological Society. We are very glad to see that Dr. Davies has had "Bristol Health Report, 1897," printed on his report in such a fashion that it can be read when the volume is placed on the bookshelf. It would save some time and trouble to us if all volumes of sufficient size were treated in a similar fashion.

Croydon Rural District.—Considerable activity in respect of sanitary matters has obtained during recent years in this district under the judicious guidance of Dr. Darra Mair and the report for 1897 shows that great progress is being made. In referring to diphtheria the importance of notifying mild cases is insisted upon and it is pointed out that the proximity of this district to the metropolis involves frequent fresh introductions of the disease. In dealing with cases of this malady precautions are, as a rule, continued until the throat has been demonstrated to be free from the bacilli associated with the disease. We note that two persons were bitten by rabid dogs during 1897 and on both occasions the patients were despatched to Paris for treatment at the rural district council's expense. In connexion with the prevention of river pollution improvement is manifest and we see that an endeavour has been made to prevent the sale of watercress which has been grown in, or washed by, the effluent from the Croydon sewage farm—a precaution which will doubtless meet with approval.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 7055 births and 4410 deaths were registered during the week ending Aug. 13th. The annual rate of mortality in these towns, which had increased in the four preceding weeks from 14·7 to 18·3 per 1000, further rose last week to 20·5. In London the rate was 20·5 per 1000, and corresponded with the mean rate in the thirty-two provincial towns. The lowest death-rates in these towns were 13·7 in Blackburn, 13·8 in Burnley, 14·0 in Halifax, and 14·3 in Swansea; the highest rates were 27·7 in Liverpool, 27·8 in Wolverhampton, 29·0 in Salford, and 29·1 in Preston. The 4410 deaths in these towns included 1127 which were referred to the principal zymotic diseases, against 575 and 796 in the two preceding weeks; of these,

902 resulted from diarrhœa, 74 from measles, 67 from whooping-cough, 43 from diphtheria, 25 from scarlet fever, and 16 from "fever" (principally enteric). No fatal case of any of these diseases was recorded last week in Halifax; in the other towns the lowest zymotic death-rates were recorded in Huddersfield, Gateshead, Oldham, and Blackburn, and the highest rates in Leicester, Liverpool, Preston, and Sheffield. The greatest mortality from measles occurred in Portsmouth and Plymouth, from scarlet fever in Norwich, from whooping-cough in Salford and Sunderland, and from diarrhœa in Wolverhampton, Birkenhead, Liverpool, Leicester, Sheffield, and Preston. The mortality from "fever" showed no marked excess in any of the large towns. The 43 deaths from diphtheria included 27 in London, 4 in Leeds, and 3 in West Ham. No fatal case of small-pox was registered last week in any of the thirty-three large towns; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 13th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on the same date was 2293, against 2321 and 2326 at the end of the two preceding weeks; 201 new cases were admitted during the week, against 276, 232, and 224 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 173 and 174 in the two preceding weeks, declined again last week, to 171, and were slightly below the corrected average. The causes of 144, or 1·0 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bedford, Leeds, and in thirteen other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Burnley, and Blackburn.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 18·6 and 20·0 per 1000 in the two preceding weeks, declined again to 19·8 during the week ending August 13th, and was 0·7 per 1000 below the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·7 in Dundee and 17·4 in Aberdeen to 20·8 in Glasgow and 26·4 in Greenock. The 598 deaths in these towns included 80 which were referred to diarrhœa, 17 to whooping-cough, 13 to measles, 12 to scarlet fever, 9 to diphtheria, and 5 to "fever." In all, 136 deaths resulted from these principal zymotic diseases, against 113 and 134 in the two preceding weeks. These 136 deaths were equal to an annual rate of 4·5 per 1000, which was 0·7 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of diarrhœa, which had increased from 26 to 77 in the four preceding weeks, further rose to 80 last week, of which 46 occurred in Glasgow, 12 in Dundee, and 6 in Paisley. The 17 deaths from whooping-cough showed a decline of 13 from the number recorded in the preceding week and included 7 in Glasgow and 4 in Aberdeen. The fatal cases of measles, which had been 25 and 20 in the two preceding weeks, further declined to 13 last week, of which 4 occurred in Edinburgh and 4 in Dundee. The deaths from scarlet fever considerably exceeded the number recorded in any recent week and included 7 in Glasgow. The fatal cases of diphtheria, which had been 2 in each of the three preceding weeks, rose to 9 last week, of which 3 occurred in Glasgow, 3 in Greenock, and 2 in Dundee. Of the 5 deaths referred to "fever" 3 were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 79 in each of the two preceding weeks, declined to 71 last week, but exceeded by 13 the number in the corresponding period of last year. The causes of 26, or more than 4 per cent., of the deaths in these towns were not certified either by a registered medical practitioner or by a coroner.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 per 1000 in each of the two preceding weeks, increased to 25·5 during the week ending August 13th. During the past four weeks the rate of mortality in the city has averaged 24·0 per 1000, the rate during the same period being 17·8 in London and 19·3 in Edinburgh. The 171 deaths registered in Dublin during the week under notice showed an increase of 11 upon the number in the preceding week, and included 31 which were referred to the principal zymotic diseases, against 14 and 27 in the two preceding weeks; of these, 19 resulted from diarrhœa, 5 from whooping-cough, 3 from scarlet fever, 3 from "fever," 1 from diphtheria, and not one either from small-pox or measles. These 31 deaths were equal to an annual rate of 4·6 per 1000, the zymotic death-rate during the same period being 5·0 in London and 2·5 in Edinburgh. The fatal cases of diarrhœa, which had increased from 4 to 18 in the three preceding weeks, further rose to 19 last week. The deaths referred to different forms of "fever" which had been 3 and 5 in the two preceding weeks, declined again to 3 last week. The 3 deaths from scarlet fever exceeded the number recorded in any week since April last. The 171 deaths in Dublin last week included 42 of infants under one year of age, and 40 of persons aged upwards of sixty years; the deaths of infants showed a slight decline, while those of elderly persons exceeded the number in any recent week. Eight inquest cases and 5 deaths from violence were registered; and 53, or nearly a third, of the deaths occurred in public institutions. The causes of 15, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Staff-Surgeons: A. G. Wildey to the *Hawke* and H. J. Hadden to the *Cruiser*. Surgeons: H. Hunt to the *Northampton*; John Grant to Malta Hospital; Beauchamp F. Parish to the *Ramillies*; George T. Bishop to the *Raven*; and Murray P. Jones to the *Vulcan*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Charles F. Pollock to be Colonel, vice W. A. Catherwood, promoted. The under-mentioned Majors to be Lieutenant-Colonels:—John Stevenson, William L. Lane, Patrick J. Dempsey, Kenneth S. Wallis, John W. H. Flanagan, Owen E. P. Lloyd, V.C., James G. MacNeece, Morgan D. O'Connell, Alexander S. W. Young, John J. Falvey, Horatio R. O. Cross (1st Life Guards), and Charles Seymour.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant John McMullen, M.B., 3rd Volunteer Battalion the King's (Liverpool Regiment) to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Engineers: 1st West Riding of Yorkshire (Sheffield): Surgeon-Captain G. Robinson to be Surgeon-Major. *Rifle:* 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Frederick Norman to be Surgeon-Lieutenant. 4th Volunteer Battalion the King's (Liverpool Regiment): Surgeon-Major W. S. Limrick to be Surgeon-Lieutenant-Colonel. 5th West Middlesex: Surgeon-Captain H. C. C. Shaw resigns his commission. 5th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Robert Taylor Halliday to be Surgeon-Lieutenant. 1st Tower Hamlets: Surgeon-Lieutenant A. C. Tunstall to be Surgeon-Captain.

CADET BATTALION.

1st Cadet Battalion the Manchester Regiment: Acting Surgeon E. Proudlove resigns his commission.

THE RED CROSS SOCIETY AND THE ARMY MEDICAL AUTHORITIES IN CUBA.

A correspondent writes: Much friction has prevailed since the commencement of the American campaign in Cuba between the army medical authorities of the United States and the Red Cross Society. Chiefly through the agency of the lay press this bad feeling has now come to a climax and some of the medical journals have taken up the quarrel. From the first Dr. Sternberg, Surgeon-General of the United States Army, has set his face against the employment of women nurses at the front, giving as his reason that they are an encumbrance to an army mobilised for active operations and also pointing out that the Army Medical Department was well able to cope with the needs of the sick and wounded. However, of late there have come grave complaints from the front of the inadequacy of the army medical and nursing staff. Public indignation has been

greatly excited and has called forth replies both from Surgeon-General Sternberg and Lieutenant-Colonel Senn, chief of the operating staff with the army in the field, in which they defend the Army Medical Department from the attacks made upon it. Surgeon-General Sternberg draws attention to the fact that the deficiency in regular medical officers made it necessary to employ nearly 300 contract surgeons and that more are being employed every day. Most of these medical men from civil life are doing good service and many of them are thoroughly well-equipped physicians and surgeons with ample hospital experience, but it has been impossible to make a careful selection owing to the great pressure of business in the Surgeon-General's office and the urgency has been so great that it has not been practicable to have examining boards to verify their qualifications. General Shafter's army at Tampa, according to Surgeon-General Sternberg, was thoroughly well supplied with the necessary medicines, dressings, &c., for field service, but owing to insufficient transportation he left behind at Tampa his reserve medical supplies and ambulance corps. Surgeon-General Sternberg asks the medical profession in the United States to reserve its judgemnt until he has had the opportunity to receive full information regarding the efficiency of the medical service in the vicinity of Santiago. With reference to the overcrowded and dirty condition of the transports carrying sick and wounded it is understood that an inquiry has been ordered and steps will be taken to affix the blame to those responsible.

Correspondence.

"Audi alteram partem."

THE CLAIM OF MEMBERS AND FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND TO CHOOSE THE COLLEGE REPRESENTATIVE ON THE GENERAL MEDICAL COUNCIL.

To the Editors of THE LANCET.

SIRS,—As two of the Fellows and Members making the claim above mentioned, and as honorary secretaries of the subcommittee (F. and M.R.C.S. Eng.) of the Corporate and Medical Reform Association, Limited, which prepared the petition formulating the claim, and therefore intimately acquainted with the views of the petitioners and of the Committee, may we ask the favour of space for some explanations which your very powerful leading article in THE LANCET of July 23rd, 1898, on this claim appears to call for on our part? Your leading article in THE LANCET of April 2nd, 1898, p. 943, on the same subject frankly commended the terms of our influentially-signed petition, which the College Council has now rejected; and you say in that article: "In the end, however, the matter will possibly come before a court of law; for if the Council should come to the conclusion that they have acted rightly in appointing a person to be a member of the General Medical Council, then the petitioners and other Fellows and Members of the College who share their opinions will naturally endeavour to obtain an authoritative answer to the question 'to whom does the right of election belong?' On the other hand, should the Council of the College be of opinion that they have indeed usurped a function to which they have no legal right, it is probable that they would hardly feel justified in relinquishing the powers which they have already exercised for forty years except under the mandate of a court of law." We have been informed, we believe trustworthily, that the Council was equally divided on our petition; so that were Mr. Richardson Cross to act on the views submitted to him by Mr. George Jackson as a constituent and also by Mr. Horsley and other Fellows through us, though he is in no way pleged to do so, his single vote might turn the scale and secure a noble example of a new "self-denying" procedure. If this hope fails there remains that other hope which animates us, and which your suggestion so highly sanctions, of a "mandate of a court of law" to strengthen the hands of the conscientious "self-denying" members of the College Council. In that article you speak of "body corporate" as the "technical sense" of the word "body" used in the Medical Act. It is, we submit, the literal sense, and to show it to be technical some other sense should be adduced, which the very clear definitions of the College charters do not permit. In the more recent article (July 23rd) you give a list of the 20 "bodies," each of which should "choose" a member of the General Medical Council, and you state by whom the member is, in fact, at present sent to the Council in the case of each body. In only 3 instances out of the 20, it appears, is the member "chosen" by the corporation as a "body"—namely, by Oxford and Cambridge Universities and by the Apothecaries' Hall of Ireland. In all the other 17 instances the express terms of the Medical Act appear to be set aside. In the case of the 4 Scottish universities a two-line section of the Universities (Scotland) Act, 1889, amends, in effect, the Medical Act and vests the power of appointment in the several university courts. In all the other 13 instances the Medical Act is, it seems, violated and the franchise conferred by it unlawfully abrogated.

It is, therefore, very correctly you point out that Members and Fellows of the English College suffer whatever they suffer in this respect in common with the constituents of many other bodies. The insertion in the Universities (Scotland) Act, 1889, of the section we have mentioned affords fair inference that the Scottish universities were advised, and well advised as we maintain, that the Medical Acts vested the choice in the whole of each respective "body." Scottish graduates are already stirring in the matter, by means of their own select committee of the Corporate and Medical Reform Association; and Dr. James Myrtle of Harrogate has spoken to several Members of Parliament who fully admit the propriety of repealing that clause which furtively disfranchised 4 great constituencies—considerable sections of our profession. In the other 13 instances a favourable decision in the case of the Royal College of Surgeons of England would constitute a binding precedent, admitting to their rightful franchise all who are in fact constituents of the several "bodies." How greatly such a change would widen the present too narrow and oligarchic constituencies of the General Medical Council will at once be perceived. It would be contrary to every tradition of THE LANCET to question the expediency of such widening and unlike its practical common-sense views of medical politics to suggest that because this is not all the reform needed we should not endeavour to secure it, even though it may be within our reach. There is, we venture to submit, no evil which the profession at present suffers that is not to be traced to that narrow and selfish policy of the corporations which THE LANCET has consistently deprecated and censured. That selfish and narrow policy they could not have maintained for nearly half a century but for the control which their governing bodies obtained over the General Medical Council by the usurpation of this franchise to choose the members of that Council, and of that illegal control we believe we have the right, the power, and the opportunity to deprive them. A persual of the questions (Nos. 5 and 6) addressed in September last by certain electors—including Mr. George Jackson and Mr. Anderson, who are specially mentioned in your article of the 23rd ult.—to candidates at the recent election of a Direct Representative for England on the General Medical Council (which elicited favourable replies from Sir W. Foster, M.P., and from Mr. Victor Horsley, the rival candidates) will show that this claim was general and referred to the rights of all *de facto* constituents of all the bodies which should by law be represented on the Council.

These explanations, showing how far-reaching are our claims and how beneficial would be the effect of their establishment, may, we hope, more than satisfy any doubt on the score of expediency. Those who are actively asserting this claim are in full sympathy with the desire of the Members of the Royal College of Surgeons of England for a direct voice in the government of their own College, amongst them being Mr. Joseph Smith and Mr. W. G. Dickinson, the president and honorary secretary of the Society of Members of the College. But the College Council by its determined opposition has paralysed the Fellows; in the College the Members are absolutely helpless; and an agitation solely for the reform by Parliament of the College in this one particular would be so difficult in comparison with the measure under consideration that the advice to relinquish the easy assertion of a certain and possessory legal right in favour of the shadowy

expectations from such an agitation would—except that it is given by you, Sirs—appear like the effort of the lapwing to withdraw the dangerous intruder from her treasure.

The suggestion that our claim is in any sense technical may, besides consideration of the far-reaching changes its successful assertion would effect, best be met by the statement that it is a claim to reform—into compliance with the statute—what you well describe in clear and convincing terms as "the present method by which the representative of the College upon the General Medical Council is chosen by the Council of the College, and not by the corporation as a body," whereas the Medical Act, Section 7, specifically requires that the representative shall be chosen by the corporation as a "body" and *not* by the Council of the College.—We are, Sirs, your obedient servants,

TOM R. TAYLOR, M.D. Lond., F.R.C.S. Eng.
R. B. ANDERSON, F.R.C.S. Eng.

August 10th, 1898.

THE AMERICAN RED CROSS AND THE SPANIARDS.

To the Editors of THE LANCET.

SIRS,—Some time ago it was stated in the daily papers that the duty of rationing the Cuban belligerents allied to the Americans in their attack on Santiago was handed over to the Red Cross Society. This statement may not have been founded on fact, but if it were ever brought to the notice of the Spaniards that the American Red Cross Society was undertaking the important belligerent duties of a commissariat department it is not difficult to understand the "severe charge" "unreservedly" made against them by your special correspondent on board the hospital ship *Relief* to the effect that "they did not respect the Red Cross."

I am, Sirs, yours faithfully,

W. G. MACPHERSON, Major, R.A.M.C.

London, Aug. 11th, 1898.

THE PLAGUE AT HONG-KONG: OVER-CROWDING IN THE CITY OF VICTORIA, HONG-KONG.

To the Editors of THE LANCET.

SIRS,—The following table is interesting as showing the surface overcrowding in a city where more than 1000 persons have this year died from bubonic plague:—

District.	Chinese houses.	Floors.	Chinese population.	Non-Chinese houses.	Non-Chinese population.	Acreage.	Total number of persons per acre.
1	503	811	7,720	31	428	531	15·3
2	955	2,353	21,120	—	1,108	267	83·2
3	18	33	4,210	355	1,369	158	38·5
4	776	2,341	23,230	128	1,834	45	556·9
5	960	2,688	21,720	21	351	23	959·6
6	805	2,308	16,680	3	398	23	742·5
7	722	2,227	16,010	7	179	27	599·6
8	732	2,231	18,540	5	129	2	444·4
9	1,023	2,457	23,860	19	160	40	600·5
10	564	1,213	7,370	47	296	258	29·7
—	7,078	18,660	160,460	616	6752	1,414	—

Health District No. 3 contains not only the great majority of the European residences of the city but also the more important of the European shops and mercantile offices, to which are attached in many cases quarters for the office coolies and caretakers; in the other districts many of the European and other non-Chinese residents are compelled to occupy the upper floors of the better-built Chinese houses. A single medical officer of health deals with this crowded mass of humanity and the sanitary inspectors are very few in proportion to the population.

I am, Sirs, yours faithfully,

"ONLY ONE THOUSAND DEAD."

"HYPERPYREXIA IN MALARIAL FEVER."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 14th just arrived I have read with exceeding interest a case under the above heading recorded by Mr. Charles Lloyd Worrall. It is of particular interest to me, as scarcely two weeks ago I had under my care a case which to my mind is almost similar as regards the symptoms and physical signs, but different as to causation. As the particulars of the case might prove of interest not only to Mr. Worrall but to your readers, I will with your permission record it.

On June 15th at 7 P.M. a woman consulted me about her child, aged one year, which she had driven in a buggy from a neighbouring district sixteen miles distant. She stated that her child had been in excellent health from the day of birth up to 11 A.M. that morning, when shortly after returning from the usual morning walk with the black nurse it suddenly became convulsed. She at once immersed the child in a tepid bath for a short time, then wrapped it up in a warm blanket and put it to bed, when the convulsions ceased, but unconsciousness remained and a twitching of the right side of the body started; she then gave a dose of castor oil which proved effectual shortly afterwards. Seeing no improvement in the child's condition she consulted a neighbouring chemist, who prescribed potassii bromidi gr. 1 in a mixture to be given every three hours, but as this seemed to be ineffectual she deemed it advisable to consult me. On examination of the child I found it unconscious, the face was pallid, moist and clammy, there was continual twitching of the muscles of the right arm and leg, the eyelids were wide open, the eyeballs were oscillating, the irides were vacillating, and the temperature under the axilla was 105°F. I ordered the mother to remain at an hotel for the night, to at once give the child a tepid bath and put it to bed wrapped up in a warm, dry blanket, and prescribed a diaphoretic and bromide mixture to be given every hour. I again examined the child in half an hour's time to note the effect of the treatment and found that the twitchings of the muscles had ceased, the eyelids were now closed, and there was a profuse diaphoresis, but, to my surprise, I found the thermometer to register under the axilla 107·6°. Seeing that the temperature was rapidly rising and knowing that to trust to internal medication by antipyretics to reduce the temperature would not only be fruitless, but losing valuable time, I was about to proceed to apply more immediate measures, as the cold pack, when the child's breathing became very slow and laboured and it died in a few minutes; the temperature was 108·4° before death. Anyone comparing Mr. Worrall's recorded case with this one I think will agree to their similarity. Mr. Worrall attributes malarial fever as the cause of the hyperpyrexia in his case. Now in my case, although occurring in a malarious district also, still from the fact of there not being any malarial cases either at the time of the occurrence of this case or at least two months previously, or now one month since (and an isolated case of malarial fever of such severity occurring is very improbable), rather disproves that the plasmodium malariæ was the cause. More inclined am I to believe that the child whilst out walking with the black nurse was permitted to have its head exposed to the intense heat rays of the sun, thus causing a form of sunstroke.

I am, Sirs, yours faithfully,

ERNEST S. HAWTHORNE, L.R.C.P. & S. Irel.

Georgetown, N. Queensland, Australia, June 29th, 1898.

"PIPERIDINE AS A URIC ACID SOLVENT."

To the Editors of THE LANCET.

SIRS,—I am obliged to Dr. Tunnicliffe and Dr. Rosenheim for pointing out what was certainly an erroneous calculation in my paper contained in THE LANCET of June 11th as to the number of grains of a drug which it would be necessary to introduce at once into the circulation of an adult man of average weight in order to have 0·1 per cent. of the drug in the blood. I find that the number of grains should have been stated as 100 instead of 600. The calculation is based on the amount of blood being one-thirteenth of the body-weight. This alteration does not, however, affect any of the results or the conclusions deduced from the results arrived at in the paper

referred to. Dr. Tunnicliffe and Dr. Rosenheim state in their letter contained in THE LANCET of August 13th that the dose of piperidine tartrate should be 10 gr. instead of 15 gr. as originally stated by them. This would mean, on my revised calculation, that 0·01 per cent. of the drug would be introduced into the circulation if the whole of the ten grains were at once absorbed, and, as I previously pointed out, the only experiments described by the authors in their original paper as to the solvent effect exerted by piperidine on sodium biurate are with 0·1 per cent. solutions, or with 10 times as much as could be introduced into the circulation by the dosage they now recommend. In their letter of August 13th Dr. Tunnicliffe and Dr. Rosenheim, however, state that they experimented with 0·01 per cent. of the drug, though no mention of such experiments was made in their original paper, and that they found that such a percentage of piperidine tartrate increased the solvent power of the standard solution for sodium biurate one and a half times. This is the very evidence that was wanted, and, if such be the case, I shall welcome the drug as a most useful one for the removal of gouty deposits. With regard to the question of uric acid in bullock's serum I must still remain sceptical as to the proof of its presence until it has been identified by the murexide test.

I am, Sirs, yours faithfully,

ARTHUR P. LUFF, M.D. Lond.

Weymouth-street, W., August 17th, 1898.

"THE MUTUAL RELATIONSHIP AND RELATIVE VALUE OF EXPERIMENTAL RESEARCH AND CLINICAL EXPERIENCE IN LARYNGOLOGY, RHINOLOGY, AND OTOLOGY."

To the Editors of THE LANCET.

SIRS,—As the result of a series of inoculation experiments upon guinea-pigs with portions of naso-pharyngeal adenoid tissue removed by operation 16·4 per cent of the animals became tuberculous, and not 7 per cent., as stated by your reporter.—I am, Sirs, yours faithfully,

Manchester, August 15th, 1898. WILLIAM MILLIGAN.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Influence of Plague Inoculation on other Diseases.—Malaria and Plague.—The Health of Calcutta and Bombay.—Sad Accident to one of the English Lady Nurses.—The Need of a Pasteur Institute in India.—The Special Medical Officers.

IN a recent report upon inoculation among the Khoja community in Bombay M. Haffkine endeavours to show not only the protective value of inoculation against the plague, but that it influences also favourably the resistance to certain other diseases. The figures of mortality published certainly show a lower mortality from all diseases among the inoculated than among the uninoculated. This, however, does not prove his contention. Those who were inoculated may be well assumed to be the more enlightened and intelligent, they did not run away from the city like many others have done, they were not sick or weakly, and they did not consist of the very old or the very young. One would naturally look for a less mortality among the inoculated where inoculation is carried out with a naturally selected portion of a community. A difference of 89·7 per cent. in deaths from plague in favour of the inoculated part of the community is probably above the real value of the measure. However, inoculation has been shown to have considerable protective influence. A difference of 73·3 per cent. in deaths from what have been returned as "other causes" in favour of the same part of the community is too great to be trusted. That the occurrence of plague amongst a population has been associated with a diminished mortality from other causes has been recorded in many places and suggests either that the conditions which favour plague may in some unknown way be favourable to the general health of the population or that plague itself may in some unknown way affect the course of other diseases. It is an old observation that epidemics "clear the air," but the improvement or difference in mortality has never been anything approaching 73 per cent. I cannot help thinking that M. Haffkine has been trying to prove too much. It would probably have been more favourable to the cause of his prophylactic inoculation if he had limited his report to the confirmation of its plague-protecting influence.

There is one disease, at any rate, to which plague seems to have an antagonism. This is malaria. It is very suggestive that inoculation for plague should exert a favourable influence on the subject of malarial disease. Many persons who have periodically suffered from febrile attacks of malarial character have remained free from them after inoculation. The antagonism of one toxin to another, or to the development of certain forms of bacilli or other micro-organisms, is little known, but it is probably on these lines that some of the greatest achievements in experimental science have yet to be made known. This antagonism between plague and malaria may explain the practical escape of Calcutta and other places in the Lower Ganges from the present epidemic. I think it will be found that the most malarious districts have been free from plague or have suffered but slightly. It is certainly interesting to note the low general death-rate in Calcutta, Bombay, and Karachi while plague was existent in these cities and it is difficult to explain the sporadic character of the outbreak at Calcutta. Bombay at the present time has got an exceptionally low death-rate from fevers—equal to 50 per cent. below the normal. The deaths from plague exactly make up for the deficiency. The following figures show the gradual increase in the number of deaths from plague which is taking place and point to the probability of a third outbreak in Bombay. The general death-rate is about 33 per 1000.

Table showing the Number of Deaths from Plague.

For week ending May 31st ...	84	For week ending June 28th ...	53
,, ,, June 7th ...	44	,, ,, July 5th ...	38
,, ,, ,, 14th ...	26	,, ,, ,, 12th ...	55
,, ,, ,, 21st ...	15	,, ,, ,, 19th ...	63

An increase of plague has also occurred at Hubli, Bandra, and Thana, and in the Nizam's dominions.

Miss Harris, one of the lady nurses who were sent out by the Secretary of State for India on plague duty, has unfortunately been bitten by her own dog. The animal was ill and presented many suspicious symptoms, especially as it had been bitten by a stray dog a short time previously. More than ordinary caution was obviously indicated, but, unfortunately, in endeavouring to secure it Miss Harris was severely bitten on the hand. On this being reported she was advised to proceed by the next day's mail to Paris. The dog died from unmistakeable rabies the following day, but it must be ten days before Sister Harris can obtain the benefit of treatment at the Pasteur Institute. This is one more example of the necessity for the establishment of such an institute in India. Considering how prevalent rabies is, the difficulty of stamping it out in consequence of the wild animals, and the large numbers of half-starved pariah dogs everywhere continually scavenging about, the danger of hydrophobia is constantly present. The establishment of a Pasteur Institute has been talked about for five years and matters have proceeded as far as collecting over 77,000 rupees towards it, but what between the inadequacy of private support and procrastination on the part of the Government the project is still far from completion. The Supreme Government undertook a long time ago to provide the officer who would direct the treatment of the patients and the management of the laboratories. The question, however, is "still under consideration." It is not only for the treatment of hydrophobia that this scheme is required, there are many other ill-understood diseases which demand investigation. As natives of all classes have availed themselves of the benefits of inoculation against plague and cholera the serum treatment in general is hardly likely to receive further opposition.

Of the special medical officers sent out by the Secretary of State for India practically very few, except those of the last batch, remain. The authorities are now inquiring who will continue to serve with an increase of salary of 100 rupees a month. These appointments certainly give opportunities of seeing something of India, and the salary

more than covers ordinary expenditure. The work, however, from a professional point of view is very unsatisfactory. The present lull in the incidence of plague gives almost a holiday to the medical men and nurses, but there are ominous signs in many places of an early recrudescence.

July 23rd.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Eye Hospital.

THE Birmingham and Midland Eye Hospital enjoys a wide reputation. It is the largest institution of the kind in the kingdom and its influence extends over a large area. At the annual meeting this year the report stated that the sum of £3778 19*s.* had been received in subscriptions, or upwards of £200 more than last year. The expenditure amounted to £6254 2*s.* 7*d.*, as against £5763 5*s.* in the previous year. The total number of patients treated during the year was 25,580, including 1140 in-patients. These figures show how extensive is the work done; 104 beds are nearly always occupied; 7019 cases were supplied with spectacles or artificial eyes during the past year; 384 cases of cataract were operated upon with success in all but 4; and 10 cases of extraction of steel or iron from the eye by the electro-magnet had been conducted to a successful issue. The committee regretted the resignation of Mr. Lloyd Owen, who for many years had been a member of the staff.

Overcrowding at the Gaol.

The report of the Visiting Committee of the city magistrates calls attention to the large increase in the number of prisoners at Winson Green Gaol and the urgent necessity for additional accommodation. A total increase in 1897 as compared with 1895 shows the number of 1167 more prisoners. The attention of the Home Office has been called to the matter by the chairman, but at present no definite response to the subject has been submitted. Serious difficulties must soon assert themselves if the present state of things is allowed to continue.

Training Institution for Nurses.

The death of the lady superintendent of this institution, Mrs. Diamond, has cast a gloom over those associated so long with her in this valuable work. For twenty-three years Mrs. Diamond had exercised an unusual amount of tact, courtesy, and success in the administration. With firmness and ability she ensured respect for the institution and gained the confidence of the public and of the nurses under her charge.

Ice-cream and Typhoid Fever.

Coseley, some few miles from Birmingham, is at present going through an unpleasant experience of an epidemic of typhoid fever. Close investigation has been made as to the causes to which this may be attributed. In at least 5 cases it has been traced to the consumption of ice-cream. This is sufficient to show that the indulgences of an early age are not free from risks and that the opportunity for the gratification of such tastes requires to be attended with precaution in the manufacture of this much sought-for dainty. Whether the authorities will be found equal to the occasion remains to be seen, though it is manifest that some intervention is strictly called for.

August 16th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Ptomaine Poisoning at Oldham.

A SERIOUS outbreak of ptomaine poisoning has occurred at Chadderton, Oldham. An inquest on one case, that of a boy aged thirteen years, was held by Dr. George Thomson, the coroner, at the Oldham Town Hall. It had been twice adjourned and was concluded on Tuesday, August 9th. On the day following Mr. Coroner Molesworth concluded an investigation at the Chadderton Town Hall as to the cause of death in three other cases, those of a man named Shaw, aged forty-five years, and two women, aged twenty-three and twenty-one years. Dr. Hodgson, who made a post-mortem examination in Shaw's case, deposed that he had died from diarrhœa, most probably set up by ptomaine poisoning. Dr. P. Bowes stated that he had attended 22 cases of illness, excluding the three deaths, in which the symptoms were all alike, and Police-sergeant Marsden deposed that he had made inquiries in 37 cases and in all but one veal pies from Mr. Baker's shop had been eaten; in the other case the patient had eaten a meat pie. At previous sittings and at the inquest on August 10th a number of witnesses said that they had eaten veal and pork pies purchased from Mr. Baker on Thursday, Friday, and Saturday, July 28th, 29th, and 30th. They spoke to the veal pies, which contained jelly, making them very ill, whilst the pork pies and some of the veal pies, which did not contain the jelly, were harmless. The butcher who supplied the confectioner, Mr. Baker, with the veal said that the calf was killed on July 26th at a licensed slaughter-house. It was ten or eleven weeks old and was healthy and the veal was sold at 8*d.* a pound. Similar evidence was given as to the sound condition of the pigs' feet, from which the jelly of the pies was made. Mr. Baker said that he made 160 veal pies on the Thursday and his wife said that she thought about 40 were sold that day. She and one of the children had one each that night and she believed another of her children had one on the Friday. She heard no complaints about the pies. Some details are given as to one of the victims, Elizabeth McConnell, who bought a pie on the Saturday night for supper. She had part of it and her father had a piece. Both became ill, but the latter recovered. The remains of the pie were thrown on the fire on Monday. In Mr. Molesworth's court the verdict in the three cases under investigation was that death had taken place from diarrhœa set up by the veal pies which had been overkept. "Under the special circumstances of the case they attributed no blame to anyone, but they wished to say that in future all meat pies during the hot weather should be baked and sold fresh daily"—an obviously sensible suggestion. George Coleman bought a pie on Saturday on his way to a cricket match, was very ill on the Sunday, and died on the Wednesday following. Like all the others, he had vomiting and diarrhœa. Dr. Thomson summed up the evidence and spoke at some length on ptomaine poisoning. He said that experience taught that these poisons "(1) develop almost invariably in cooked meat some hours after it is prepared; (2) pig meat is most prone to develop them; (3) that the jelly produced in cooking pig meat seems most to favour their development; (4) that one portion of a carcass may be infected while the rest remains sound; (5) that though infected the meat may be to sight, smell, taste, and touch apparently sound and good; and (6) that the infective germs may exist in the uncooked meat, may survive the cooking process and develop in the cooked meat." He put the following questions to the jury: Was death due to ptomaine? Was the veal supplied sound and good to all appearance when it left the hands of the butcher? Was it to all appearance sound when cut up and put into the pies? Were the pigs' feet used for making the jelly to all appearance sound and good when used? Did the ptomaine poison develop in the pies subsequently to the jellying process? To these questions the answer was, Yes. They also found that there was nothing in the appearance of the pies to indicate that any injurious change had taken place. They also found that the method of storing the pies after they were "jellied" was satisfactory, but they wished to add as a recommendation that the windows of all confectioners should be better ventilated by slides in the windows. It does not seem that any very fresh light has been thrown on the question of ptomaine poisoning, but the evidence certainly went to show that none of those suffered who ate the pies on the Thursday when they were quite fresh, while all those who bought them on the Saturday had attacks of vomiting and diarrhœa, many of them being of great severity and four being fatal. Dr. Bowes stated that "the malady was of so severe a type that the sufferers got into a state of complete exhaustion and that death in such a case would most likely be from collapse." No blame was attributed to the butcher or to the confectioner. There is still a good deal to be learned as to ptomaine poisoning.

Deaths from Diarrhœa.

As usual at this time of the year deaths from diarrhœa show a considerable increase. The week before last there

were 32, more than twice as many as in the preceding week, while the average for the previous six weeks was 7. The variations in temperature have been very great and rapid.

Hospital Sunday and Saturday Fund.

The results of this year's collections for the Hospital Sunday and Saturday Fund show a little falling back which we may hope is only temporary. In the Sunday Fund there was a slight increase, but in the Saturday Fund, which depends mainly on workpeople, there was a considerable falling off, "attributable to exceptional causes," presumably the unfortunate occurrence of strikes, leading to loss of wages and the transfer of trade and manufacture to other countries. The amount distributed to local medical charities this year is £7200 as compared with £7500 last year.

August 17th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

New Hospital, Aberdeenshire.

THERE has just been completed for the Alford District Committee of the Aberdeenshire County Council a district cottage hospital for infectious cases. The wards are well lighted and ventilated and will be heated by "Antislow" combustion grates. The water-supply and drainage works are very satisfactory. The hospital, which is capable of extension, will at present accommodate 16 patients.

Epidemics in Aberdeen.

Last week there were notified to the medical officer of health for Aberdeen 138 cases of whooping-cough, being 8 more than in the previous week, and 20 cases of scarlet fever, being 6 more than in the week preceding, and there were also reported 6 cases of erysipelas, 5 of measles (as against 14 in the week before), 2 of diphtheria, and 1 of typhoid fever. Nineteen cases were removed to the City Hospital, 1 to the Royal Infirmary, and 2 to the Sick Children's Hospital.

August 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Charitable Lotteries.

ONE of the favourite methods of collecting money for hospitals and medical charities in Ireland has been the establishment of a bazaar or *fête* at which lotteries have frequently proved a prominent and most lucrative feature. Many poor hospitals have benefited substantially by those mammoth bazaars for which Dublin has achieved a reputation. The lottery system has, however, in the opinion of many, been altogether overdone, for nowadays, scarcely a week passes during which books of lottery tickets for various charitable purposes are not freely circulated through the post. This method of "raising the wind" has just received a severe blow in the public action of his Excellency the Lord Lieutenant of Ireland. The Roman Catholic Archbishop of Dublin, Dr. Walshe, made a public protest some months ago in connexion with the gambling seductions of a bazaar organised by some of his co-religionists for what was recognised, however, as a most deserving institution. The effect was entirely satisfactory in reference to that particular project, but the protest was soon more or less forgotten, so that many, both Protestant and Roman Catholic, institutions in Dublin have since made use of the lottery system for obtaining money for medical charitable purposes. The recent public pronouncement of the Lord Lieutenant and the refusal of her Excellency the Countess Cadogan to patronise or to be present at a bazaar or *fête* in which a lottery for £100 proved a feature will certainly have a most salutary influence, the Countess being well known in Ireland as a most generous benefactor of charities of every description. The following is a brief account of what has just occurred. An advertisement appeared in the daily papers for some weeks of a bazaar and *fête* to be held at the Park, Kingstown, for the purpose of collecting funds for the construction of schools in that neighbourhood, the festivities to be patronised and opened by her Excellency the Countess Cadogan. Quite recently public placards notified that a lottery for £100 was to be held in connexion with the garden *fête*. His Excellency the Lord Lieutenant had his attention drawn to the lottery, and refused on the part of the Countess Cadogan to patronise the bazaar. His decision was conveyed in a letter, published in the morning papers, from his private secretary to Sir Percy Grace, one of the committee of the entertainment, in which he stated that her Excellency would not patronise or be present at the bazaar unless the lottery was withdrawn. The lottery project has now been abandoned and the Æstiva *fête* will be opened by the Countess Cadogan at Kingstown on August 17th.

The Public Health Congress and Exhibition in Dublin.

The Public Health Congress and Exhibition which opens on August 18th promises to prove the most interesting and important feature of the Dublin medical year. The programme of events has recently undergone revision, and it is now announced that the offices of the Royal Institute of Public Health and the Health Exhibition will be opened at 9 A.M. on the 18th inst. in the front hall of Trinity College for the issue of members' cards and cards of invitation to the Lord Mayor's ball and the various other entertainments, excursions, &c.

Queen's College, Belfast; the President's Report.

From the published report of the President of Queen's College, Belfast, for the past year I find that there were 223 medical, 135 arts, 28 law, and 17 engineering, students in attendance. Ten ladies attended the medical classes. During the last ten years the council has not been called upon to inflict a single penalty for breach of college law. A large number of honours have been gained by old students of the College during the year, and 953 volumes and publications were added to the library during the past 12 months. The natural history museum has been augmented in its accommodation by the erection of a new gallery, and "Two Friends," who desire that their names shall not be divulged, have given an unsolicited donation for the purpose of commencing the establishment of a museum of sanitary science. It has been decided to add a library to the Students' Union in which there are 255 members and which was worked so well financially that there is a balance of £42 3*s.* 3*d.* to credit. The Literary and Scientific Society will attain its jubilee next year. Both it and the Medical Students' Association continue to flourish. In conclusion, while the president thinks that in his judgment the College is as vigorous, its aims are as noble, and its work, within the limits assigned to it, is as successful as in the palmiest days of its history, he deplores the present unsettled condition of Irish university education. He feels, as one cognisant of the evils of the present situation and as one called to deal practically with it from day to day, that the existing position of affairs is well nigh intolerable, and he believes that the statesman who will rid us of it will be entitled to the everlasting gratitude of the whole community.

Londonderry Lunatic Asylum.

The overcrowded state of this asylum is causing a good deal of anxiety, as there are now in it 460 patients while it was only built to accommodate 344. In one corridor, which is only capable of holding and properly accommodating 36, 60 patients are sleeping. It was decided at a meeting of the board of the asylum held on August 11th, that the medical superintendent should again write to the Board of Control urging at the earliest possible date the completion of the temporary asylum.

Omagh Lunatic Asylum.

Mr. Alexander N. McKelvey has been appointed Assistant Medical Officer of the Omagh Lunatic Asylum.

Death of Mr. W. Sproule Love, M.R.C.S. Eng.

The announcement of the sudden death of Mr. Love on August 13th was heard with the most sincere regret in Omagh, where, for almost half a century, he was known and respected by every person in that town. A few years ago he had an attack of paralysis, in consequence of which he was partially rendered unfit for duty but he held so completely the confidence of the public that in times of serious illness his services were often demanded. It was while attending a patient in this way with Mr. Todd, J.P., of

Omagh, some distance from that place, that he was suddenly seized with symptoms of cardiac failure on August 12th and after being conveyed home he died on the next day at the age of seventy-two years.

The Campbell College.

This college, which was opened towards the end of 1894, was founded and endowed by a Belfast merchant, Mr. Henry James Campbell, who provided £200,000, his object being to furnish a superior liberal education. To carry out his purpose the original trustees purchased the demesne of Belmont, which is about 70 acres in extent, in the vicinity of Belfast, and erected under the guidance of their architect, Mr. W. H. Lynn, one of the best equipped scholastic edifices in the United Kingdom. The buildings are in the late Tudor style and contain a central hall surrounded by sixteen large class-rooms. A special feature is the science section, which contains a lecture theatre, two chemical laboratories, three physical and biological laboratories, instrument and balance room, detached workshops (wood and metal), and dark room for photography. The greatest care has been paid to the drainage, ventilation, and heating of the college, as well as to the construction of the infirmary and detached sanatorium. There is a cricket field (8 acres) and a football ground (10 acres). Until recently the government of the college was in the hands of the trustees, but it has been decided to form a new scheme for the Campbell College, and the governing body for the future will consist of the three trustees and twelve other members. The names of the new governors were published last week and amongst them are two members of the medical profession, Dr. Redfern and Professor Byers.

August 16th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

The Cadaver Humanum: its Conservation.

ONCE and again THE LANCET has drawn attention to the ingenuity shown by Italian surgeons in immunising the dead subject from decomposition, and the theme has acquired fresh interest from its recent handling by Signor Luigi Ferrara. Throughout the peninsula, whether in its anatomical museums or in the family vaults of its *campi santi*, wonderful specimens of such successful immunisation are to be seen; but none of these can approach the perfection attained by Dr. Efisio Manini in a *métier* which may well be called national. For forty years that Neapolitan surgeon has striven to improve on the methods hitherto in practice, and his results, as known to the profession, throw all previous successes into the shade. "Without incisions"—so I am informed,—"without injections, simply with a series of baths, he has succeeded in preserving the human subject from all risk of decomposition whatever." His *modus operandi* consists of three stages. 1. Provisional desiccation, the so-called "conservazione allo stato coriaceo transitorio" (preservation applied to the corium in its transition period). Bodies so prepared and immersed in a liquid of his own devising may regain their primary freshness and be thereafter subjected to anatomical operations or demonstrations like the ordinary cadavera of the dissecting-room. 2. Petrifaction of the body so prepared—a process which, in Dr. Manini's hands, is so effective that the density as well as the consistency of marble is attained, insomuch that a few hours after the completion of this stage a key brought in sharp contact with the surface elicits a true metallic ring from the body. 3. The restoration to this desiccated and petrified subject of the freshness, the softness, the flexibility, and even the complexion of the natural state. As described to me the bodies so treated come from Dr. Manini's hands as if asleep, or in a condition of temporarily suspended animation. Well-known Italians dead within the last decade—like Benedetto Cairoli and Sanfelice—have been thus "stereotyped," so to say, for posterity and become to the anatomist, the anthropologist, and the medical jurist an object-lesson in the prosecution of their respective interests. In the last of these—that concerned with the investigation of capital offences—the gain to the resources of justice would be immense when contrasted with the means it has to fall back upon in Paris for instance, where the laborious process of keeping the dead body continually under waves of fresh air exhausts itself in a few days' time. Dr. Manini has been sustained in his life-long work by the sympathetic encouragement of surgeons like Nélaton and Billroth, and of anatomists like Richard Owen and Sappey. It is well known that had Napoleon III. kept his throne for a few months longer he would have placed the Neapolitan surgeon at the head of an anatomical museum specially devoted to the products of his *métier* and his methods, while it is an open secret that Dr. Guido Baccelli had decided to signalise his tenure of the portfolio of Public Instruction by making Dr. Manini director of a sanitary institution, when the fall of the Crispi Administration frustrated his decision. The veteran Neapolitan surgeon is now well stricken in years and Baccelli's successors in office have little time to lose if their country is to be spared the chagrin of again seeing one of her scientific *bene-meriti* receive from abroad the recognition denied to him at home.

The Pope's Health.

"Il Papa continua a stare benissimo" (the Pope continues in very good health)—such is the bulletin just received from the Vatican—confirmed, moreover, by his having the same morning celebrated mass in his private chapel and his having thereafter resumed his official audiences. The bulletin is all the more gratifying as the "sturbi viscerali" or intestinal catarrh from which he has been suffering constituted the "sharpest curve" his health has yet encountered in its comparatively even tenour. Ever since His Holiness ascended the throne in the February of 1878 he has been subject, though in a mild form, to such attacks, and last spring, when influenza was epidemic in the Eternal City and numbered victims even in the Sacred College, the dread lest the prevailing malady should overtake him, supervening on this "point of least resistance," redoubled the anxiety and the care of his body-physician. Besides this chronic or intercurrent malaise there is another drawback to his successful treatment—the change of air indicated from time to time is denied him, "prisoner" as he is "in a palace and a garden," albeit with doors locked on the inside. His twenty years' confinement, indeed, has told on him all the more severely since by birth a mountaineer and by tastes enamoured of rural life he misses his native "monti Lepini" and even the hill-country around Perugia where for many years he relieved the cares of his archbishopric by field sports. On the other hand, His Holiness is endowed with "the pulse of longevity" and the "æquus animus" of his favourite poet, and this, coupled with the "plain living and high thinking" which have been his characteristic through life, greatly reinforces the watchful skill of his medical adviser the Commendatore Dr. Lapponi, whose aim it seems to be, with the help of his able colleagues, to achieve for his august patient the distinction attained by Pio Nono alone in the long line of Pontiffs—that of falsifying the prediction whispered in the ear of each newly elected Pope: "Non videbis annos Petri" (thou shalt not see the years of Peter).

August 15th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Queen Victoria Homes.

THE first annual meeting of subscribers to the fund for the establishment of the Queen Victoria Homes for Consumptives was held in Sydney on June 27th, Lady Hampden presiding. It was stated in the report that although numerous and varied methods had been adopted by the committee to raise funds the total amount subscribed (£13,543) was disappointing. It was found that the support solicited for other institutions of a cognate character more or less militated against the efforts of the committee and especially an impression which prevailed that the claims of the Queen Victoria homes conflicted with those of the Thirlmere Home for Consumptives. The committee had arranged to take over the Thirlmere Home, Mr. Goodlet having generously offered the home rent free. It was to be hoped that the public would continue subscriptions, not only to maintain this admirable institution, but to increase its usefulness and to add to the capital fund of the committee until it attained

a sufficient magnitude to justify the committee in submitting a comprehensive proposal. Almost all the speakers expressed regret that the public had not responded more liberally and enthusiastically and urged that the necessity of providing for the phthisical patients must be brought home to the people's minds. The Hon. Dr. MacLaurin, in seconding the adoption of the report, gave some statistics as to the death-rate from phthisis. He said it was very satisfactory to know that during the last ten years a marked decrease had taken place in New South Wales in regard to the number of deaths from phthisis. Up to ten years ago the number had been increasing considerably. In 1885 there were 1095, when the population stood at 950,000, whereas last year, when the population stood at 1,320,000, the number of deaths was reduced to 964. For the years before 1885 phthisis had been increasing much more rapidly than the population, while now, although the population had increased 30 per cent., the number of deaths was very much less. The improvement which had taken place was even more marked with respect to the particular form of phthisis which mainly affected young children. In 1885 there were 271 deaths of young children from that disease in this country, whereas in 1897 the number of deaths was only 126. He thought the improvement which had taken place was attributable to the care taken to insure the purity of the milk-supply by the destruction of cows which were found to be suffering from tuberculosis.

The Sydney Hospital Saturday Fund Association and the Hospitals.

Reference was made last month to the complaint of the committee of the Hospital Saturday Fund Association that patients recommended by the officers of the association were not admitted to the hospitals without inquiry as to their financial position. The association authorities have now written to the hospital authorities demanding that the same privileges be extended to the subscribers to the fund as those extended to other corporate bodies. The board of directors of the Sydney Hospital decided to obtain legal opinion on the matter.

The Sydney Hospital and its Finances.

Some time ago a special committee was appointed to inquire into the financial working of the Sydney Hospital. The committee has now reported, the period over which its investigations extended being limited to the last three years. Most items of expenditure showed a considerable increase each year, but generally speaking this was accounted for by the increased number of patients treated and the increase in the prices of tradesmen's goods. The chief increase was in the out-patient department, where the number of patients had yearly increased and was now "inordinately large." The committee suggested: (*a*) that the number of out-patients treated each day should be limited except in urgent cases; (*b*) that after a patient has been under treatment one month he should be discharged and re-admitted if the medical officer deem it essential; and (*c*) as far as possible patients should be made to attend that hospital nearest to the place where they reside. The committee also suggested that the nurses' stipend should be reduced from £20 to £16 per annum in order to assimilate the training and pay of nurses at the Sydney Hospital with that at the Prince Alfred. The report was adopted with the exception of the proposal with regard to the nurses' pay. At a recent meeting of the board of directors a resolution by Dr. Freeman was carried "that no medical officer shall hold office after attaining the age of sixty years except as a consultant."

Austin Hospital, Melbourne.

The difficulties at the Austin Hospital, Melbourne, to which reference was made last month, have been satisfactorily settled. So much public feeling was expressed as to the retirement of Mr. Norcott that the committee had to give way and reinstate him. The honorary staff of the institution protested against the action of the committee, the patients presented an address, and the subscribers decided to hold a meeting and call the committee to account. The committee, however, forestalled the subscribers by reappointing Mr. Norcott before the meeting was held, at which its action in so doing was simply approved. It must be very gratifying to Mr. Norcott to find how highly his services have been appreciated and it is also satisfactory to find public sympathy accorded so freely to medical men in circumstances of the kind.

Medical Inspection of Vessels arriving at Port Phillip.

The Board of Public Health of Victoria recently decided to restrict the hours at which vessels would be cleared at Port Phillip Heads by the port health officers to from 6 A.M. to 6 P.M. in winter and to 7 P.M. in summer. The object of the change was to enable inspections to be made by daylight. A deputation from the representatives of the various shipping companies waited on the board to protest against the alteration and pointed out that great inconvenience would be caused both to passengers and shippers. It was observed that all the passenger ships were provided with electric light, which ought to be sufficient for medical inspection. The ship-owners also objected that the inspections are often unnecessary—in the case of vessels which have been already examined at other Australian ports and obtained "clean bills of health." The boats from China are overhauled by health officers six times in Australian waters before arriving at Port Phillip and in a period of sixteen days.

Tuberculin and Dairy Herds.

Mr. Cameron, veterinary inspector to the Board of Health, Victoria, has presented a report showing the result of his experiments with tuberculin as a test for tuberculosis in dairy cattle. If properly applied he believes it never fails. Characteristic experiments are made on the herds at the Leongatha labour colony. A number of cows reacted to the test and on being slaughtered were all found to have tuberculosis. Forty showed no reaction and fifteen months later were again injected and showed no reaction. Two were slaughtered and found to be free from tuberculosis. Mr. Cameron is satisfied that if the whole of the dairy herds in the colony were tested and the cattle affected condemned and slaughtered tuberculosis in cattle could be easily stamped out.

The Health of Tramway Employés.

The Commission recently appointed to inquire into certain grievances of the employés of the Melbourne Tramway Company has been taking medical evidence as to whether the gripmen and conductors suffer in health from their occupation or the hours of their service. The evidence was to the effect that they did not suffer more than other members of the community, and their health compared very favourably with that of other men working in the open-air—in fact, as a class they were healthier than men in other benefit societies and were not injured by the vibration of the cars, nor were they overworked.

Chronic Lead Poisoning in Queensland.

The Deputy Governor of Queensland has appointed the Hon. W. F. Taylor, M.D., D.P.H., M.L.C., W. W. Love, M.B. Edin., E. S. Jackson, M.B., C. J. Pound, F.R.M.S., and J. B. Henderson, Government Analyst, to be a board to inquire into and report upon the subject of chronic lead poisoning in Queensland.

Infectious Disease in Victoria.

The returns of cases of infectious disease for the fortnight ending June 25th show that typhoid fever and diphtheria were diminishing, but that scarlet fever is somewhat increasing in prevalence. The actual figures were: typhoid fever, 117 cases, 16 deaths; diphtheria, 72 cases, 11 deaths; and scarlet fever, 115 cases, no deaths.

Legal Actions by a Medical Man.

Dr. Gurdon, of Brighton, recently sued a patient for £17 6*s.* 6*d.* under somewhat unusual circumstances of interest to surgeons to friendly societies. Dr. Gurdon was medical officer to the local branch of the Ancient Order of Foresters and the defendant was transferred to his list from another lodge, as Dr. Gurdon supposed, of the same order. He found out, however, that defendant had been transferred from another order, the Protestant Alliance, and that the transfer was illegal. Dr. Gurdon returned the fees to the Lodge he had received on defendant's behalf and declined to attend him. He then charged defendant the ordinary fees for the attendance he had given him while on his Lodge list, amounting to £7 7*s.* The rest of the amount claimed was for previous attendance and for an accouchement for which he was engaged. The defendant declined to pay and Dr. Gurdon sued him. In his evidence Dr. Gurdon said defendant was well able to pay and not a suitable man to be in a Lodge. The bench struck out the fees charged while defendant was on the medical list, except for one visit given after Dr. Gurdon had given notice of his intentions, and also the accouchement fee, giving a verdict for £6 6*s.* and £1 6*s.* costs.

July 5th.

Obituary.

WILLIAM PEPPER, M.D. PENNSYLVANIA,

FORMERLY PROVOST OF THE UNIVERSITY OF PENNSYLVANIA AND PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE UNIVERSITY.

IN Professor William Pepper, whose death is announced as having taken place on July 28th at Pleasanton, in California, the world of science has lost a distinguished exponent of medicine and the United States a most public-spirited citizen.

William Pepper was born in August, 1843, so that at the time of his death he was not quite fifty-five years of age. His father, Dr. William Pepper, was a prominent physician and Professor of the Theory and Practice of Medicine in the University of Pennsylvania. Young Pepper imitated his father's example and graduated in medicine at the University of Pennsylvania at the age of twenty-one. He devoted himself at once to the study of clinical medicine and practical pathology and in 1868 was made Lecturer on Morbid Anatomy in the Medical School of the University. Two years later he became Lecturer on Clinical Medicine; in 1876 he was elected Professor of Clinical Medicine, and finally, in 1881, he became Professor of the Theory and Practice of Medicine, thus following in the footsteps of his father. In the same year he was elected Provost of the University, a post which he held until 1894. As a medical teacher he was enthusiastic and eloquent, as a diagnostician he was both careful and acute, while he left his mark on American medical education by his persistent advocacy of a longer medical curriculum for the student. When he was elected Provost the compulsory course for the student was only two years in duration. He at once raised it to three years and on his retirement from office gave practical and munificent effect to his views by a donation of 50,000 dollars, with a promise of 1000 dollars as an annual subscription for five years, towards an endowment fund to pay for greater teaching facilities for science in the University. In the same year the course was extended to four years.

Professor Pepper is known to the medical profession chiefly by his contributions to, and able editing of, the System of Practical Medicine by American Authors. This System, which was published in 1885, did for medical knowledge in America what Ziemssen's Cyclopædia had done ten years previously in Germany. It systematised and correlated the varying scientific opinions of persons all chosen to write because of their position and claims to know, and thus presented to the student a comprehensive account of disease in a series of authoritative monographs. Professor Pepper's contribution to the first volume dealt with Relapsing Fever and is an excellent example of how such monographs should be written. Utilising to the full his experience gained at the Philadelphia Hospital he refused to dogmatise concerning the etiology, preferring to help his readers by presenting them with a faithful clinical description and summarising for them all the best-known literature of the subject.

As a benefactor to his beloved city of Philadelphia Professor Pepper's actions were almost innumerable. He gave to the University the William Pepper Laboratory of Clinical Medicine in memory of his father; he inaugurated a system of commercial museums, to be connected with other museums in different parts of the country, wherein people might see specimens of the produce of all parts of the world; he secured immense donations for the Philadelphia Public Art Gallery and he founded the Free Library. We have not exhausted the list of Professor Pepper's public works, but we have said enough to show that in him Philadelphia is deploring one of the most generous as well as one of the most distinguished of her sons, while the medical world has to mourn the loss of an enlightened man of science, a wise teacher, and a liberal leader.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. H. Endres, *privat-docent* of Histology in the University of Halle.—Dr. Evert Julius Bonsdorff, formerly Professor of Anatomy and Physiology in the University of Helsingfors, at the age of eighty-eight years.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT EDINBURGH.

OUR report of the sixty-sixth annual meeting of the British Medical Association is now completed in the following account of the proceedings in certain of the sections. In finishing our report we wish to record our sense of the great courtesy that was extended at Edinburgh to our representatives by the editor of the *British Medical Journal*, the secretary of the Association, and the local secretaries and other officials responsible for the arrangements of the Edinburgh meeting.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 29TH.

Professor WRIGHT (Netley) opened a discussion on

The Serum Diagnosis and Therapeutics in Infective Diseases

The problem, he said, to be discussed was the nature of serum reactions and the relation of those reactions to the therapeutics of infectious disease. There were certain fundamental facts established by different observers in this domain. Pfeiffer was the first to observe that the serum of an immunised animal conveyed to the blood or serum of an animal into which it was inoculated the power of: (1) spherulating; (2) dissolving the micro-organisms; and (3) the power of neutralising the toxins which are set free by the dissolution of bacteria. Then there were Durham's and Gruber's observations that the blood of an immunised animal possessed the specific power of agglutinating and sedimenting the bacteria which were causally associated with the disease against which the animal (which supplied the serum) had been immunised. This was the fundamental principle of serum therapeutics, preventive and remedial. Lastly, Widal and Gruber and Grünbaum have shown that this power of agglutinating bacteria existed not only in the blood of animals which had recovered from and acquired immunity against a disease, but also in the blood of animals which were still the subjects of the disease. These observations suggested several very interesting problems. What was the nature of these substances upon which these properties of blood serum depended and how did they originate? Also what was the *rôle* these substances played in the production of immunity and recovery? The speaker then proceeded to consider these problems in the light which Ehrlich and others had cast on the nature and origin of antitoxins in the body. It was necessary first of all to understand the meaning of the terms "toxin" and "antitoxin" and how they were related. A morphological theory such as that of Metchnikoff, that toxins were poisons which were taken up into and destroyed by white corpuscles did not seem to help us. What was the use of erecting a morphological theory to explain what was obviously a chemical process? It might reasonably be asked what were the chemical processes which were associated with poisoning on the one hand and resistance to poisoning on the other. Ehrlich's chemical theory was far more reasonable—viz., that a poison was a substance which was capable of entering into chemical composition with, and interfering with, the functioning of protoplasm. Just as an aniline dye injected into the blood or tissues stained the nuclei and protoplasmic substance of cells by entering into combination with them, and therefore altering the chemical composition of those cells, so a toxin acted by entering into and altering the composition of protoplasmic cells. Further, Ehrlich had classified poisons by their chemical affinities into neurotropic toxins which had an affinity for nerve tissues, hæmotropic toxins which had an affinity for the blood, and so on. Then as to antitoxins, before Ehrlich published his theory no one was able to form any adequate idea as to what was the real nature of an antitoxin. It was true that Calmette had previously shown by experiments with venin and antivenin—the latter of which was destroyed by heat though the former was not—that an antitoxin

neutralised but did not destroy a toxin. Metchnikoff regarded an antitoxin as some property in the leucocytes which destroyed toxins (devoured them, so to speak), thus again starting a morphological theory to explain chemical facts. But Ehrlich's researches and observations had enabled us to define (and this was Ehrlich's theory reduced to its simplest terms) an antitoxin as a toxitropic substance which had a chemical affinity for a toxin and which joined itself chemically on to that toxin. Turning next to the origin of antitoxic substances it was not a substance specially manufactured for each occasion. Such an idea would endow the elaborative processes of the body with too great a power of "intellectual specialisation." It must be a normal constituent of the body of the animal which under special circumstances could be manufactured in greater quantity. Thus, as Ehrlich had put it, there were three steps in the process of elaborating an antitoxin when a poison or toxin was introduced into the body of an animal; first, there was loss or consumption of antitoxin, then replacement, then over-compensation. These were the three phases which took place in the manufacture of an antitoxin. In this way was the toxin rendered inert; firstly, by the chemical affinities of the antitoxin being satisfied and a neutral stable compound of antitoxin and toxin resulting, and then the animal was rendered immune by the over-formation of antitoxin. This had been proved by finding that if antitoxin be injected into an animal first and the toxin afterwards nothing resulted, no symptoms arose—they neutralised each other. These various steps had also been established beyond doubt by a series of experiments with ricin (a toxin found in castor oil seeds) and other poisons. The recollection of these facts was of the utmost practical importance. All these facts had had relation to toxins and antitoxins and their interaction one with the other. Turning to another set of experiments bearing on the relation of toxins to the different physiological systems, they had seen that tetanus toxin had a special affinity for the central nervous system. The first fact in time and importance in this connexion was that tetanus toxin had been shown to be partially neutralised by an emulsion of the central nervous system of a susceptible animal. If tetanus toxin were injected and at the same time an emulsion of this kind were also introduced the effects were considerably less severe. This showed that the central nervous system normally contained some substance which was antagonistic to a neurotropic toxin. On the other hand, snake venom and some other toxins were not rendered less toxic by the simultaneous administration of emulsions of brain and cord. This proved, extended, and confirmed the law that most toxins had their special affinities. Some toxins which had affinities for several of the physiological systems were known as polytropic substances. Another interesting fact in that domain was that one-fifteenth of the fatal dose of tetanus toxin, if applied directly to the nervous system, would be fatal. Professor Wright referred to the various attacks which had been made upon Ehrlich's theory and went on to consider whether that theory would account also for the production of anti-bacterial substances in the organism. The suggestion that the same theory which solves for us the problem of the production of antitoxins in the system was capable of solving for us also the problem of the production of anti-bacterial substances in the organism appeared at first sight to be eminently improbable. On closer examination, however, the matter wore a somewhat different aspect. For consideration showed that the neutralising effect which was obtained when antitoxins were incorporated into the body along with bacterial poisons was obtained in an equally marked manner in Pfeiffer's original experiment when anti-bacterial substances were incorporated along with bacterial poisons. They were almost certainly warranted in inferring from this fact that there was a close chemical analogy between antitoxins and anti-bacterial substances. In fact, they could infer from this experiment of Pfeiffer that antitoxins differed from the anti-bacterial substances only in this, that the antitoxins neutralised the biotoxins (i.e., the toxins which emanated from living bacteria), whereas the anti-bacterial substances neutralised the necrotoxins (i.e., the poisonous substances which emanated from the dead bodies of bacteria). It was obvious that the suggestion that Ehrlich's theory was capable of explaining the production of anti-bacterial substances in the body won support from the fact that there was a chemical analogy between these substances and antitoxins. Further analogies might readily be pointed out between the two classes of substances. But perhaps it would be better to come directly to the point and to ascertain whether the law which governed the production of antitoxins in the body was or was not also the same law as that which governs the production of anti-bacterial substances in the organism. They might begin by inquiring, as in the case of the antitoxins, whether anti-bacterial substances were already present in the normal organism. The answer to this question could not be doubtful for a minute. They had ample evidence that both bactericidal substances and agglutins were to be found in the normal blood and tissues. To take one example out of many, it was a matter of common knowledge that normal blood would agglutinate typhoid bacteria in all dilutions up to 1 in 4. They might next inquire whether the introduction of bacteria into the organism entailed upon the organism a loss of its normal bacteriotropic constituents. It would evidently be conformable to what occurred in the case of antitoxins if they were to find that such a loss of bacteriotropic substance actually occurred. It was certain, on *a priori* grounds, that such a loss of bacteriotropic substance did, as a matter of fact, supervene upon every bacterial inoculation. Further, it had been firmly established by experiment that when typhoid bacteria were grown in a culture medium which contained agglutins the agglutins disappeared from the culture medium *pari passu* with the growth of micro-organisms. Now, the conditions which obtained in such a culture medium were exactly reproduced when typhoid bacteria were cultivating themselves in the tissues of the invaded organism. Further, the conditions of the culture were reproduced in all their essential features when dead typhoid bacteria were inoculated hypodermically. They might thus infer from these experimental facts that both in case of typhoid infection and in case of anti-typhoid vaccination an appreciable quantity of bacteriotropic substance was withdrawn from the lymph and tissues. It followed from the foregoing: (1) that the conditions under which bacteriotropic substances were produced in the organisms were in all probability precisely similar to those under which antitoxins were produced; (2) they had seen in each case that a substance which was chemically identical with the immunising substance formed a normal constituent of the blood and tissues; and (3) they had also seen in each case that a substance which was chemically identical with the immunising substance was withdrawn from the tissues under the influence of an injection of bacterial substances. They need now only take a single step further and they would recognise that the production of the bacteriotropic substance in the organism was in all likelihood produced in the organism by just such a process of compensation and over-compensation for the loss, as takes place when toxitropic substances were produced in the body. Applying these facts to the therapeutics of infectious disease the issue of every infective disease depended upon two factors. It depended first upon the capacity of the bacteria for preserving their chemical integrity in the presence of the bacteriotropic substances which were normally present in the blood. It depended in the second place upon the capacity of the body-cells for preserving their chemical integrity in the presence of proto-plasmotropic bacterial toxins. The problem of therapeutics of infectious disease was the problem as to how we might intervene in these reactions in such a manner as to promote the disintegration of the bacterial protoplasm and prevent the disintegration of the cellular protoplasm. The disintegrating force which was brought to bear upon the bacterial protoplasm was represented by the affinities of the bacteriotropic substances for certain elements of that protoplasm. The primary object of our therapeutics must therefore be to give effect to those chemical affinities by increasing the quantity of available bacteriotropic substance. In like manner the disintegrating forces which were brought to bear upon the cellular protoplasm were represented by the chemical affinity of the protoplasmic tropic substances for the constituent elements of the cellular protoplasm. The secondary object of therapeutics must, therefore, be to diminish or nullify that disintegrating force by binding up the protoplasmic tropic substance which exerted that disintegrating force. With a view to doing this they must introduce antitoxic tropic substances into the blood. Here, however, an important point presented itself for consideration. This point had reference to the variety of antitoxin which was required. It had been customary, in consequence of the confusion of ideas which was traceable to the illogical state of the terminology, to assume that anti-bacterial substances could not possibly be of any avail against bacterial intoxications. Consideration would show that this was a capital error. It behoved them in every

case wherever they were dealing with an intoxication process to begin by inquiring into the nature of the bacterial poisons which were being introduced into the system. And if it appeared on inquiry that the bacterial poisons which were being absorbed into the system were, as apparently they were in the case of cholera, poisons which had formed originally part and parcel of the bacterial protoplasm, it was obvious that the appropriate antitoxin to apply would be not an antibiotoxin—i.e., it would not be a substance which was capable of neutralising the poisons which emanated from a living bacteria. The appropriate antitoxin would be an antinecrotoxin—i.e., a substance which possessed the power of neutralising the poisonous substances which were contained in the dead bacterial bodies. The truth of these conclusions appeared to Professor Wright to be confirmed in a striking manner by the fact that the anti-bacterial substances which were produced in the blood under the influence of Haffkine's anti-cholera inoculations appeared to exercise a very favourable influence upon the choleraic intoxication process.

Dr. GRÜNBAUM (Liverpool) wished to say a few words on the practical aspect of the question of serum diagnosis. The typhoid test was at first thought to be infallible, but now several modifications had taken place in the general opinion on this test. There were certainly two important factors to consider. The amount of dilution requisite was a point on which opinions differed considerably. He thought that 1 in 10 was not sufficient; as much as 1 in 20 was often required. Then as to the time required for the reaction, which must be limited, he thought that it ought not to be more than two hours. On the whole the serum test in typhoid fever should not, he thought, be regarded as a mere routine procedure which any office-boy could do; it required as much care, skill, and experience as any other scientific experiment.

Dr. H. E. DURHAM (London) thought that the opener of the discussion had placed too much reliance upon Ehrlich's theory. This theory was useful as a working hypothesis, but it seemed to him too precise and too definite to be carried out in its entirety. Its chief novelty lay in the introduction of the word "bacteriotropic" for "anti-bacterial." One must also bear in mind the limitations of the word "toxin," for, strange as it might seem, some toxins are not toxic.

Dr. MITCHELL BRUCE (London) wished to confine himself to the clinical aspect of the subject and based his remarks upon two cases in which antistreptococcic serum had been employed. The first was a case of septic endocarditis occurring in a child among a household in which measles prevailed. Three days before the child was first seen he had been operated upon for some affection of the throat. He shivered and in the course of the next day developed diphtheria, for which diphtheritic antitoxin had been employed, and from this the child recovered. But subsequently the child developed malignant endocarditis. The temperature chart and other particulars were given. Antistreptococcic serum was injected and the patient made a complete recovery. The second case was also a child who was admitted with fever, delirium, and drowsiness. The patient had frequent rigors, pains in the head and down the spine, restlessness, and delirium, with epistaxis from time to time. The most striking feature about this case was the intermissions of apparently perfect health, lasting for two or three days, which were followed by an attack of all the symptoms just mentioned, lasting several days. Among the symptoms also was a systolic murmur over the cardiac area. The temperature, of which a chart was shown, ran a typically pyæmic course. On the nineteenth day of the illness some antistreptococcic serum was injected. This was followed by the ordinary intermission, but two days later the temperature again went up and all the symptoms returned. In view of the success of the previous case and thinking that the serum used might have been fallacious, some was procured from another source and 10 c.c. were injected. Immediate and permanent recovery succeeded this. Dr. Bruce thought that the inferences to be drawn from these two cases were: (1) that we might confidently look for success with antistreptococcic serum in a considerable number of cases of septicæmia; (2) that the favourable effect, if any, was produced with remarkable rapidity; (3) that antistreptococcic serum might, as in both of these cases, succeed where other remedies had failed; and (4) it was most important to bear in mind that success might possibly attend one kind of serum after another kind had failed.

Dr. CLAUDE KER (Edinburgh) thought that Dr. Bruce's contribution was one of great value. In reference to the serum diagnosis reaction he was in the habit of using a dilution of 1 in 30 and giving a four hours' time limit. He had employed it on from 60 to 80 occasions and had only had 8 dubious results.

Sir JAMES GRANT (Ottawa) reminded the audience that so long ago as 1860 he had introduced the use of serum in cutaneous diseases with success and had published his investigations and results in the *Medical Times and Gazette* of 1863.

Professor WRIGHT, in reply, said he could not agree that the term "bacteriotropic" had the same significance and limitations as "anti-bacterial." The far-reaching character of Ehrlich's researches was difficult to over-estimate, and especially the establishment of the chemical nature of the changes, the fact that we have normally bacteriotropic substances in the blood, and finally and most important of all, the steps of loss, compensation, and over-compensation in the manufacture of antitoxin. The facts (1) that bacteriotropic substances were normally present in the blood and (2) that they were also in the blood of animals who were still the subjects of bacterial infection were some of the most important and certain data which had been established.

Dr. BEZLY THORNE (London) proposed the following motion, which was carried by acclamation: "That the Medical Section invite the Council to take such means as may seem most appropriate to press upon the legislature the urgent necessity of providing each sanitary district with a bacteriological laboratory which shall be available for the gratuitous examination of expectoration and other products, for the purpose of the early diagnosis of disease, and for the gratuitous supply of materials for the serum treatment of infectious disease."

Dr. ALEXANDER HAIG (London) gave a demonstration of the granules precipitated in the blood by chloride of ammonium (process of Barker-Smith) and gave an account of the process of estimating them by the microscope and some of their variations in health and disease. His contention was that under all conditions the number of granules vary with the quantity of uric acid passing in the urine, and a diagram was shown to illustrate this point. He had found the following to be the common relations of the granules and red cells—viz., in the domain of physiology the proportion was 1 to 10 in the morning and 1 to 20 in the evening, but more in children than in adults. In the domain of pathology he mentioned as examples, Bright's disease and chronic gout, in which the relation varied between 1 to 30 and 1 to 40. Any of these quantities could be reproduced by the action of drugs. A specimen of blood from Bright's disease and gout was shown in contrast with normal blood.

Dr. W. F. SOMERVILLE (Glasgow) read a paper on

The Importance of increasing the Respiratory Capacity in the Anæmias of Young Adults.

He said that anæmia in young adults was frequently seen by the practitioner. Doubtless the common feature of all such cases was deficiency in the red blood colouring matter, which must be due to many different causes and produce a variety of symptoms. He alluded to the causes of the conditions among the poorer classes, among which were insufficient and unwise feeding, bad ventilation, and overcrowding. Those more fortunately circumstanced were subject to over-pressure at school, which prevented their taking enough open-air exercise, and they often attended social functions at late hours. He spoke of the symptoms which led to such subjects seeking advice, instancing breathlessness, palpitation, neuralgias, disorders of menstruation, and muscular fatigue with slight cause. He recommended iron in combination with arsenic. The increase of hæmoglobin was mainly of value in improving the respiratory activities of the tissues; there must be abundant opportunities for the union of the hæmoglobin with the oxygen. It was the failure to realise this which explained the lack of benefit in some cases after prolonged administration of iron. Only by the complete restoration of blood function in such cases could a total cure be attained. Medicaments should be combined with the education of the respiratory mechanism. He went on to detail the methods of recognising whether an individual were using his respiratory muscles aright and adequately, and spoke of the great improvement in chest measurement, breathing capacity, appetite, and general tone established by complete and intelligent respiration and by adopting the methods which he advocated.

Dr. H. J. CAMPBELL (Bradford) read a paper on

Four Cases of Intracranial Disease.

The first case was that of a boy who had well-marked hemiplegia, but in whom the post-mortem examination only showed some distension of the lateral ventricle on the opposite side, together with some softening of the cerebral tissue; a few miliary tubercles were also present upon the basal vessels, the boy having died from acute general tuberculosis. The second case was regarded during life as one of a tumour of the pituitary body, but at the necropsy it was found that the symptoms arose from inflammatory deposit upon the dura mater in the sella turcica and on the optic groove and clinoid processes. The third case was one of hæmorrhage into the lateral, third, and fourth ventricles from rupture of vessels in the choroid plexus in a boy aged fifteen years, who had double congenital cystic kidneys. The last case was one of mitral stenosis with embolism of the posterior cerebral arteries in which the clot had blocked the openings of the arteries of the posterior perforated space without occluding the main trunks. From this there was partial recovery, but subsequently a second embolus occluded the basilar and caused death.

Dr. ALFRED P. HILLIER (South Africa) read a paper on

Chronic Dysentery.

The term "dysentery," he said, embraced a group of diseases affecting the large intestine, differing less in actual symptoms than in etiology and final pathological results. It occurred both sporadically and in epidemics; in the tropics and subtropics it ranked in malignancy and mortality with yellow fever, small-pox, and cholera as one of the four great epidemic diseases in the world. Dysentery was a very ubiquitous disease. Certain well-known predisposing causes so frequently produced it that one was compelled to believe that, if a micro-organism be indeed the cause, any condition setting up intestinal catarrh would provide a suitable soil for its growth and development, and that from the readiness of the onset of dysentery under this condition the micro-organism itself must be even more omnipresent than that of tuberculosis. Among the commonest predisposing causes were heat, exposure to wet and cold, impure water and food, starvation or irregular feeding. After dealing with the pathology, symptoms, and course of the disease Dr. Hillier referred to the line of treatment which his experience pointed to as most successful—the three chief remedies being opium, castor oil, and a milk diet used with discretion.

Papers were also read by Dr. T. R. FRASER (Edinburgh) on the Antitoxic Action of the Bile in relation to the Toxins of Diphtheria and Tetanus; by Dr. FAURE-MILLER (Paris) on the Use of Cold Baths in Typhoid Fever; and by Dr. A. STODART WALKER (Edinburgh) on Alcoholic Neurasthenia.

OPHTHALMOLOGY.

THURSDAY, JULY 28TH.

The discussion was opened on Mr. E. TREACHER COLLINS'S paper on

Cases in which Skiagraphy was effective for the Detection of Foreign Bodies,

an account of which was published in THE LANCET of July 30th.

Mr. NETTLESHIP (London) mentioned a case of a suspected foreign body in a child's eye which was on the point of being operated upon; skiagraphy gave rise to a negative result with regard to the presence of a foreign body. In this way the patient was saved from the inconvenience of an operation.

Dr. TATHAM THOMPSON (Cardiff) asked if the fluorescent screen was of any practical use in locating foreign bodies in the eye.

Mr. CARGILL (London) mentioned that he had had four cases which Mr. Mackenzie Davidson had skiagraphed and which had been operated upon with successful results.

Mr. MCHARDY (London) mentioned a case of injury to the eye which required the removal of the lens. A few days later irritation set in and Mr. Mackenzie Davidson located a foreign body behind the ciliary body; the electro-magnet was applied but failed to remove the piece of steel. The patient was advanced in years and the other eye being healthy the injured eye was removed; after removal the electro-magnet had to be applied several times before the foreign body was removed.

Dr. REEVE (Toronto) showed the apparatus which was used by Dr. Sweet in localising foreign bodies in the eye.

Mr. MACKENZIE DAVIDSON (London) replied that the use of the screen was only of service in the case of foreign bodies of considerable size, it being of no use in the case of small particles.

Dr. JAMES HINSHELWOOD (Glasgow) read a paper on

The Use of Holocaine.

A one per cent. solution when used gave rise to a burning sensation which in the course of from ten to twenty seconds passed into a state of anæsthesia which remained for one or two minutes. The drug when applied in this way did not affect the size of the pupil. It acted in half the time of cocaine and the effect was quite as marked and lasted longer. It also had no further effect on the eye. It did not affect the tension of the eyeball.

Dr. EDGAR BROWNE (Liverpool) stated that he had used the drug and had found it useful in cases of foreign bodies in the cornea.

The PRESIDENT (Dr. ARGYLL ROBERTSON) mentioned that he had been rather disappointed with its effects. He, however, explained that the solution might not have been well prepared.

Dr. HINSHELWOOD replied that the cases of failure were due to imperfectly prepared solutions; he stated that the solution should be freshly prepared every week, as it lost its effect after a time.

Dr. LESLIE BUCHANAN (Glasgow) read a paper on

Leuco-sarcoma of the Choroid.

He pointed out the rarity of this condition and described the structure of the tumour as being particularly vascular, consisting of a tubular arrangement of structure. The condition was even more malignant than glioma of the retina.

Dr. HILL GRIFFITH (Manchester) and Mr. NETTLESHIP made a few remarks and Dr. BUCHANAN replied.

Dr. C. H. USHER (Aberdeen) showed a case of Orbital Tumour with specimens.

Professor SNELLEN (Utrecht) gave an interesting historical review of

The Operations for the Treatment of Strabismus.

The first operation for strabismus was performed in 1839. He then described the various stages through which the operation had passed up to the present time. In the early operations the muscle was divided. These cases were followed by divergence and weakness of action. Then von Graefe cut the tendon and in this way controlled the amount of retraction by means of the attachment of the muscle to Ténon's capsule. Priestley Smith's operation by cutting out a portion of the tendon was next described. The condition of strabismus fixus (von Graefe) was alluded to; it was probably a congenital condition with adhesions between the eyeball and the orbit. These cases were difficult to operate upon.

Dr. WILLIAMS stated that the vast majority of cases of strabismus called for operation; in cases where there was very little refractive error correcting glasses had very little effect in removing the strabismus.

Dr. LITTLE (Manchester) mentioned that he frequently performed Snellen's horizontal incision with division of the tendon.

Mr. GEORGE BERRY (Edinburgh) described three cases of strabismus fixus in which he experienced great difficulty in finding the muscle. He also stated that in the advancement operation the stitches did not slip if they were introduced into the sclera; in that way they got a stronger pull upon the eye.

Professor SNELLEN replied by pointing out the great importance of correcting glasses in young children.

Mr. J. B. LAWFORD (London) read a paper on

The Operative Procedure for Cases of Incarcerated Iris.

He pointed out that the use of two knives in making the incision was a difficult operation, but prevented the loss of aqueous. The method he recommended was to pass a Graefe knife into the anterior chamber and straight across to the other side and draw the knife gently downwards and then remove; in this way two openings were made through which the iridectomies might be performed.

Dr. WILLIAMS and Mr. EDGAR BROWNE (Liverpool) made comments on the method.

Professor SNELLEN mentioned that he performed a small iridectomy to relieve the tension and that this was followed by a better cosmetic effect.

Mr. TREACHER COLLINS, Dr. GRAINGER, Mr. GEORGE BERRY, and Mr. LITTLE took part in the discussion, and Mr. LAWFORD replied.

Mr. R. WILLIAMS (Liverpool) described a case of

Paralysis of Accommodation after Influenza.

The patient had an attack of iritis and had a tuberculous tendency.

The PRESIDENT pointed out that the question of coincidence had to be carefully taken into consideration.

Mr. JULER (London) stated that it was his experience that paralysis of the third nerve was pretty common.

Dr. GEORGE MACKAY (Edinburgh) mentioned that he had used eserine ($\frac{1}{100}$ gr.) in the form of lamellæ with excellent results.

Mr. EDGAR BROWNE and Mr. CARGILL described similar cases.

Mr. WILLIAMS replied, stating that the point which he wished to bring out was the importance of the period of slow recovery in these cases as compared with the few weeks of post-diphtheritic cases.

Dr. TATHAM THOMPSON (Cardiff) described a case of

Cyst of the Hyaline Canal producing a Double Lens.

The patient complained of defective vision in the left eye both for near and distant vision objects, with occasional diplopia and latterly headache. She had been conscious of the defective vision for fifteen or twenty years. The vision of the right eye was $\frac{20}{20}$, that of the left eye being able to detect fingers at 12 ft. with undilated pupil. The external appearances were normal and the pupils were equal and active. On examination with the ophthalmoscope a peculiar irregularity was seen to exist in the refractive condition of the central area, which was very similar in appearance to that met with in "keratoconus." The pupil was dilated with atropine and on further examination a small transparent cyst was found to exist, lying close behind the lens and being like a drop of oil suspended in water. When the pupil was fully dilated and the eye was slightly rotated a sort of tail could be made out projecting backwards for a short distance.

Dr. A. HILL GRIFFITH and Mr. MARCUS GUNN made remarks.

Dr. ANGUS MCGILLIVRAY (Dundee) read a paper on the Hyaloid Canal and its Relation to Cyclitic Exudation.

Dr. J. W. EYRE (London) read a paper on a

Clinical and Bacteriological Study of Diplo-bacillary Conjunctivitis.

He said that both sexes and all ages were susceptible to this disease, although it was most common in middle-aged women. It was definitely contagious and was transmitted through the medium of the discharge. The incubation period averaged five days. The subjective symptoms were slight and consisted of stickiness or gumming together of the lids in the morning, slight photophobia, lacrymation, smarting of the eyes, and the presence of a small quantity of whitish discharge. The most marked feature of the disease was its chronicity, when untreated lasting for many months. The objective signs were fairly characteristic. At first limited to one eye, the disease soon became symmetrical. Small masses of greyish mucus-like discharge were noted adhering to the roots of the lashes and collecting in the neighbourhood of the caruncle. Slight injection of the bulbar conjunctiva and marked injection of the palpebral conjunctiva were present, together with an erythematous fringe along the free edge of the lower lid and some congestion of the caruncle.

Mr. ARNOLD LAWSON (London) read a paper on

The Bacteriology of the Normal Conjunctival Sac and its Bearing on the Use of Antiseptics.

Of 200 cases examined 41 tubes were sterile and 159 were fertile. A platinum wire loop was used in all the cases, it being thoroughly passed over the conjunctiva and then introduced into suitable media for cultivation.

Dr. J. EYRE and Dr. MCGILLIVRAY made remarks.

Dr. A. HILL GRIFFITH (Manchester) described a case of Successful Removal of an Orbital Cyst.

Dr. JOHN HERN (Darlington) read a paper on

The Operations which are now usually substituted for Enucleation of the Eyeball.

1. Evisceration: He transfixed the globe with a Graefe knife entered about two lines external to the corneal margin passed through the anterior chamber, and made a counter puncture exactly opposite to the point of entrance. The knife was now brought out beyond the corneal margin. Another incision was made with the scissors in the opposite half of the globe corresponding exactly with the incision made with a Graefe knife; thus the whole cornea was removed. Whatever remained of the iris and ciliary body was now removed by the curette, the operator being careful to retain as much of the vitreous as possible. The gaping wound in the sclera was next carefully stitched up. This left a good freely moveable stump on which in about six weeks an artificial eye could be fitted. The cosmetic effect was extremely good. 2. Mules's operation. In suitable cases, if done without delay (on the day of accident if possible), with strict antiseptic precautions, and if a glass ball be selected which fitted loosely with the emptied sclera, results were obtained which left nothing to be desired.

Dr. MCGILLIVRAY pointed out that in Mules's operation it was much easier to remove all the contents intact.

Dr. A. HILL GRIFFITH mentioned that he never had sympathetic trouble after evisceration.

Dr. LITTLE stated that in some cases the operation gave rise to a large amount of irritation.

The PRESIDENT pointed out that the glass ball sometimes came out and gave trouble. He suggested that the surface of the glass ball might be made rough and in that way prevent the slipping and secure more accurate apposition.

Dr. HERN replied.

Dr. G. V. MILLER (Stockton-on-Tees) related three cases of Myopia in which the subjective and objective methods of testing refraction differed.

FRIDAY, JULY 29TH.

Mr. HENRY JULER (London) read a paper on

(1) *A Case of Gumma of the Ciliary Body with Recovery of Vision.*

He stated that intraocular syphilomata were rare lesions of the eye. When a gumma started within the eyeball it did so either in the iris, ciliary body, or the choroid. The case was that of a single man, aged twenty-five years, who was suffering from severe plastic iritis in both eyes. He had contracted a chancre on the penis, which was followed a month later by secondary manifestations of syphilis. He developed iritis in the right eye and a few days later the left iris became inflamed. There was much effusion of lymph and several orange-coloured deposits in both irides occurred. The right pupil was small and irregular with broad synechiæ; the left pupil was somewhat larger and also irregular. The pupillary area contained lymph. The tension of both eyes was normal. The outer part of the anterior chamber was shallow. The tension was, however, not raised. Vision could only detect fingers. There was intermittent pyrexia. A painless effusion into the knee-joint along with double orchitis and a gumma on the lower end of the right fibula occurred and somewhat relieved the eye condition. The subject of ciliary gummata had recently been brought to notice by Vernon Cargill. The lesion was a very destructive one and vision, if any be retained, was very bad indeed. The case was therefore unique in this respect and exemplified the possibility of almost complete restoration of sight. Mercurial treatment was given until salivation and stomatitis took place. Then potassium iodide was given and atropine throughout. Bull stated that choroidal gumma rarely or never occurred.

(2) *Case of Interstitial Keratitis with Acquired Syphilis.*

This case was that of a married woman who developed a sore on the genitals six weeks after marriage. The eyes were painful and the cornea were cloudy. She could count fingers with difficulty. The pain increased and photophobia, anæmia, and despondency were also present. Iodide of ammonia was given. Then mercurial treatment was given in the form of inunctions. Blood began to appear in the corneal tissue. The punctate opacities commenced to disappear. The vision improved until it became $\frac{6}{9}$. Bull classifies four groups: (1) diffuse parenchymatous or interstitial keratitis; (2) true keratitis punctata of Manthner; (3) keratitis punctata with general cloudiness of the cornea; and (4) gummatous keratitis.

Dr. HINSHELWOOD mentioned a similar case which had been treated as one of lupus of the nose. The patient was put upon mercurial treatment and she improved rapidly.

Mr. LAWFORD, Mr. JULER, and the PRESIDENT took part in the discussion.

Mr. FALLOWS (London) read a paper on (1) a case of Polypoid Growth from a Meibomian Gland, and (2) the Use of Fluorescin in the Form of Tabloids in the Diagnosis of Corneal Abrasions.

Mr. H. E. JONES (Liverpool) read a paper on Irrigation for the Nasal Duct.

Mr. JULER and Dr. GEORGE MACKAY remarked on the instrument.

Mr. JONES replied that he used boric solution. He did not use corrosive sublimate owing to its effect upon the canaliculus.

Mr. CHARLES WRAY (London) read a paper on Extraction of Transparent Lens in High Myopia. Up to August last over 2000 patients with myopia over 10 D. had been submitted to operation. The immediate results were good but the ultimate results were bad.

Mr. JOHN GRIFFITHS related particulars of a case of Acute Exophthalmic Goitre.

Dr. GEORGE MACKAY described a case upon which he had operated.

Dr. A. HILL GRIFFITH mentioned a similar case in which he had used thymus extract.

Mr. MARCUS GUNN stated that electricity had been found useful.

Dr. A. BRONNER read a paper on Crystals of Cocaine in preference to Solution.

LARYNGOLOGY AND OTOLOGY.

FRIDAY, JULY 29TH.

Dr. JOBSON HORNE (London) read a paper upon

The Pathogenesis and Earlier Clinical Evidence of Laryngeal Tuberculosis.

He said that it would not be possible for him to do more than touch upon the threshold of the disease and endeavour to demonstrate what appeared to him to be the portal of infection, the beginning and progress of tuberculous destruction, the origin and formation of the giant cell, and briefly indicate the clinical counterparts of the early pathological changes which he had learnt to regard as the earliest signs and symptoms, not only of laryngeal tuberculosis, but also of pulmonary tuberculosis. A lantern demonstration was given of photographs of microscopic sections on which the conclusions were based and some of the more important sections were shown under microscopes. The pathogenesis of the disease had been studied in larynges which post mortem presented to the naked eye none of the usual signs of laryngeal tuberculosis, but which had been removed from bodies of persons who had died undoubtedly from tuberculosis. In the examination of these larynges films were first prepared from the contents of the ventricles and stained for tubercle bacilli and the larynx was afterwards examined microscopically throughout. Dr. Horne dwelt upon the importance of the ventricle as a harbour for tubercle bacilli. The earliest changes noted in the lymphatics were a proliferation of the parenchyma of the acini and efferent ducts and the formation of masses of small round cells distending and choking the ducts and obliterating the glands, the adjacent and superficial structures remaining intact. These changes had been noted in the lymphatics situated in the walls of the ventricles when a careful microscopic examination of the entire larynx had failed to reveal changes in the lymphatics in other parts. The nature of this cell proliferation was next considered. Was it to be regarded as nothing more than an outcome of a traumatism or of some simple catarrhal process perhaps peculiar to tuberculous subjects? or was it to be attributed to one specific cause—namely, the presence of the tubercle bacillus? Dr. Horne said that although he was not prepared altogether to accept or reject the theory that these lymphoid masses were due to a simple catarrhal process, he was now able to demonstrate the tubercle bacilli in the midst of some of them and was of the opinion that once having gained an entry into the lymphatic ducts they acted as an irritant and caused a cell proliferation. The *fons et origo* of the giant cell in tuberculosis next came under consideration and by a series of lantern photographs of microscopic specimens its development from the wall of a lymph space was demonstrated. The series showed first the tubercle bacilli lying amongst the endothelial cells forming the wall of the lymph space; secondly, the division and fusion of the adjacent and divided cells; and thirdly, the separation off of this plasmodial mass as a giant cell. Reference was made to the researches on lepra laryngis by Dr. Paul Bergengrün of Riga, in which he had shown that the so-called "globi" were bacillary thrombi lying in dilated lymphatics and that the lepra giant cell developed from the lymphatic endothelium. If, then, as would appear to be the case from the foregoing, the tuberculous process commenced in the lymphatics it would be natural to suppose that those parts which were rich in lymphatics would be the more common sites for infiltration and ulceration, while such parts as were without glands would escape ulceration except by continuity. This was clinically verified. The inter-arytenoid region, the posterior third of the cord, the ventricular band, and the epiglottis, especially the petiolus, were the parts more richly endowed with glands and these were the parts more commonly ulcerated in laryngeal tuberculosis. The cord, the functionally more important part of the cord,—namely, that part lying between the two small cartilaginous bodies—being free from glands escaped ulceration excepting superficial erosion and by continuity. A proliferation of the subepithelial blood-vessels was described as taking place side by side with this cell proliferation. With regard to the muscles, changes were described as occurring at an early stage in the fibres and as being clinically brought into evidence by an early functional failure which was mainly myopathic. The earlier clinical evidence of laryngeal tuberculosis, the clinical counterparts of these early pathological changes, were next described. Whilst clinically investigating these it was necessary, inasmuch as only slight departures from the normal were being looked for, to retain a control mental image of a normal larynx. This was done by constantly examining a large number—some hundreds in all were examined—of larynges in healthy subjects or at least presumably free from tuberculosis. And it was whilst in search of normal larynges that some important aids to the present research were stumbled upon. The larynx had been examined in 359 consecutive cases of pulmonary tuberculosis or cases in which there were reasons for suspecting pulmonary disease. The points to which attention was mainly directed were the following: (1) disturbances of sensation, hypæsthesia, hyperæsthesia, paræsthesia; (2) colour changes, anæmia, hyperæmia; (3) functional disturbances; (4) impaired movements of vocal cords apart from paralysis; and (5) changes in the contour of the larynx due to slight œdema. Inasmuch as disturbances of sensation were subjective too much significance could readily be attached to them if taken alone as a clue to pulmonary tuberculosis, but in regarding them only as evidence of "hysteria" one was apt to miss important clues to pulmonary tuberculosis. Hypæsthesia was not infrequently associated with anæmia of the soft palate, and it might be stated that unless the subject was wilfully hostile to laryngoscopy the more pallid the soft palate the greater the tolerance to laryngoscopy. And when in the course of the pulmonary condition the anæmia passed off the tolerance often went with it. Anæmia of the laryngeal mucosa was noted as present in varying degrees in 157 out of 359 cases. At times it was universal; when patchy it was confined to points where the mucosa was more easily exposed to tension, occasioned by a slight œdema in association with the proliferation of subepithelial vessels. It was as frequently met with in men as in women. Hyperæmia was noted in 117 out of 359 cases and rather more frequently in males. This hyperæmia must be regarded as a feature distinct from and not amounting to acute laryngitis. Acute laryngitis did not occur so frequently as one might previously have anticipated. The hyperæmia was often transient, within a few days giving way to pallor; but at times it was most persistent. These phenomena were also attributed to the proliferation of subepithelial vessels. Disturbances in the vocal function were most frequently met with, often transient, not amounting to more than a weakness of voice or loss of tone. The production of voice called for a greater effort, there was a forgetfulness of office, a sluggishness of one or both cords to act, so that there was phonatory waste before voice was produced, and in connexion with this required effort might be mentioned that in early tuberculosis when the speaking voice was weak the singing voice was quite clear. Then the singing voice might suddenly go; this caused the patient to seek advice, and the possibility of commencing tuberculosis should not be forgotten. Transient dysphonia was more commonly met with amongst women, and especially young married women, during pregnancy. Not infrequently in cases of so-called "hysterical aphonia" thoracic signs of pulmonary tuberculosis had been subsequently made out, and it was as well to bear in mind the possibility of diagnosing "hysterical aphonia"

in the presence of pulmonary tuberculosis. Impaired movement of the vocal cords apart from paralysis was described and considered to be myopathic in origin and due to the changes noted in the muscle fibres. With regard to transient œdema of the laryngeal mucosa, the contour in a large number of larynges in early pulmonary tuberculosis when compared with that existing in a normal larynx was found to be partially lost, more particularly in the inter-arytenoid and arytenoid regions along the ventricular bands, and at the base of the epiglottis. A fine crenating or fringing occurs upon the folds of mucous membrane in the inter-arytenoid space, not sufficient to be called an excrescence, but met with sufficiently often in pulmonary tuberculosis as to be deserving of attention. An early but transient loss of symmetry in the outline of the arytenoid eminences occurred. The ventricles become less patent and this loss of patency was commonly associated with some œdema of the inner wall of the ventricular band, which was ascertained clinically in endeavouring to pass a curved platinum loop into the ventricle in search of tubercle bacilli. A slight œdema of this part of the ventricular band, together with an enfeebled action of the compressor sacculi laryngis, must effectually retain sputum laden with tubercle bacilli within the ventricle when once it had been lodged there in the act of coughing. Moreover, it was pointed out that the choking by a cell proliferation of the ducts of the muciparous glands opening into the ventricle, the closure of the ventricle by the œdema secondary to the proliferation of vessels, and the failure of the compressor sacculi laryngis through changes in the muscle fibres to discharge its contents, all combine to deprive the cords of the mucus necessary for their lubrication. The cords lose that semi-translucent mother-o'-pearl sheen and present an opaque pallor more approaching a dead ivory-white. With insufficient lubrication superficial erosions occurred; this did not amount to ulceration as met with elsewhere in the larynx inasmuch as the essential element was absent—namely, the lymphatics.

DERMATOLOGY.

THURSDAY, JULY 28TH.

Professor BOECK (Christiania) opened a discussion on the

Nature and Treatment of Lupus Erythematosus.

He first referred to the various forms in which the disease might be met with and then emphatically stated his belief that lupus erythematosus was a tuberculous disease. Out of a large number of cases which he had collected 28 had presented some internal tuberculous manifestations, 8 had developed tuberculous glands in association with the disease, and 23 had presented enlarged glands in some part of the body. Only one-third of the total number of cases had not presented any tuberculous manifestation. After describing the various diseases for which lupus erythematosus might be mistaken, he summed up the histological evidences which he regarded as supporting the view that the disease was of tuberculous origin, viz.—(1) the presence of giant cells in the lesion; (2) the presence of small migratory cell infiltration; and (3) the destruction of the intercellular tissue. He also thought that the presence of peripheral nerve disturbance favoured this view.

Dr. UNNA (Hamburg) took an entirely opposite view. He thought that the disease was wholly unconnected with tubercle, though clinically the condition had some superficial resemblance to lupus vulgaris, which was universally admitted to be a true tuberculous process. He emphasised the value of thorough histological investigation of every case and adduced the histological features as against the tuberculous view. Not only had there never been found any evidences of tubercle bacilli in the lesion, but the characters of the process did not accord with those of tuberculous lesions of the skin. The overgrowth downwards of the horny processes of the epidermis should not, he said, be confused with comedones. There was a peculiar moisture which was quite characteristic of lupus erythematosus, accompanied by a cellular overgrowth which was not found in dry scaly conditions, and it was this which led him to prefer desiccating remedies. As regards internal treatment he favoured alkalies, carbonate of ammonia, ichthyol, and salicylates, all of which were useful but unable to cure without external remedies. On the other hand, external remedies could often cure without internal remedies. He exhibited a valuable table classifying external remedies in the treatment of lupus erythematosus. Group 1 consisted of desiccating remedies, such as powder of oxide of zinc, powder of calamine, powder of bismuth, &c., or sulphur zinc paste or washes consisting of lead lotion, lime water, &c. These soothing remedies were very valuable but were very tardy in their action. Group 2 consisted of compressing remedies for the removal of the œdema of the skin—collodion with ichthyol or salicylic acid, zinc, gelatin, compressing bandages, masks, &c. Group 3 consisted of anti-hyperæmic remedies such as plaster mulls or pastes of chrysarobin, ichthyolsulfon, and mercury. Among these he had tried pyraloxin, which he believed to be a very dangerous remedy. The micro-cautery (with tiny points) might be classed in this group, and he recommended a platino-iridium point in preference to a point of platinum. Group 4 consisted of necrotising remedies which were of two degrees: (*a*) peeling remedies such as salicylic soap, plaster mull, zinc, resorcin paste, &c., and (*b*) ulcerative remedies such as pyrogalol in strong doses, sublimate, and the Pacquelin cautery. Group 5 were inflammatory remedies. Of all these the anti-hyperæmic remedies were, he believed, best for cure, the compressing remedies coming next in order, and the desiccating or soothing group being also valuable.

Dr. MORGAN DOCKRELL (London) expressed the opinion that there was no evidence of lupus erythematosus being tuberculous, and urged that the name was very misleading. The term "lupus," he thought, should be given up and a term like "atrophic erythema" or "nl-erythema" used in its place. It was true that lupus erythematosus occurred sometimes on a tuberculous soil and led to a compound condition, but he was persuaded of its non-tuberculous origin. In reference to the treatment of the condition he quite supported Dr. Unna's remarks on the value of the soothing treatment, and found that he could always stamp out the disease without the use of irritants.

Dr. EDDOWES (London) narrated a case of lupus erythematosus which he thought might have some tuberculous origin on account of the circumstances under which it arose. He had taken pieces of skin from the patient and inoculated guinea-pigs in the laboratory at St. Bartholomew's Hospital, but with negative results. As regards the treatment he recommended lead and calamine lotion as a daily application, and generally applied a solution of ethylate of sodium to obstinate cases. Scarification was sometimes useful and so was acid nitrate of mercury, though this was severe. These remedies were the best with which he was acquainted. Quinine, as recommended by Dr. Payne, was often very beneficial but apparently did no permanent good.

Dr. MAAR (Copenhagen) mentioned the results of the treatment suggested by Professor Finsen of Copenhagen, who had employed in the treatment of lupus vulgaris and lupus erythematosus the chemical rays of electric light or sunlight by the exclusion of heat rays. In the few cases in which that treatment had been tried a successful result had been obtained by persevering with it for a long time.

Dr. LESLIE ROBERTS (Liverpool), Dr. STOPFORD TAYLOR (Liverpool), and others took part in the discussion.

Mr. MALCOLM MORRIS (London) then opened a discussion on

What do we Understand by Eczema?

The nature of eczema, he said, was a subject which had engaged the attention of dermatologists ever since the time of Willan; but although a great deal was known about eczema they were not agreed as to what it really was. Was it a special process following certain laws in its evolution and manifesting itself by definite characters, or was it a clinical expression denoting results of several forms of morbid action? His own conception of eczema was expressed in the following definition, which he had given five years ago: "A catarrhal inflammation of the skin originating without visible external irritation and characterised in some stages of its evolution by serous exudation." The terms of this definition excluded all forms of artificial dermatitis—i.e., inflammation of the skin produced by chemical or mechanical irritants. Lesions due to such causes might be exactly like those of genuine eczema, but there was the fundamental difference that they appeared in response to a visible cause and began to disappear when the cause ceased to operate. On the other hand, true eczema arose without obvious cause; the skin might be healthy or there might be some pre-existing abnormal condition. The older dermatologists, following Bateman, regarded eczema as a vesicular eruption caused by an external irritation, "by the rays of the sun or the irritation of various substances applied to the skin, or by mercury taken internally, though it was found

associated with gastro-intestinal inflammation without any mercurial preparation having been taken." Bazin, whose influence long dominated the French school, saw in eczema an expression of various constitutional conditions such as scrofula, arthritism, or herpetism. In that way various forms of eczema were easily accounted for by their dependence on some real or hypothetical dyscrasia. This constitutional theory gave place in turn to Hebra's doctrine that eczema was nothing more than a superficial inflammation of the skin due to some external cause—i.e., the effect of a local irritation. At the present time, under the influence of Unna, many dermatologists are coming to look upon eczema as a parasitic disease; and another view which had many supporters in the present day was that it had its origin in some disordered action of the nervous system. There were facts in favour of each of these agencies, and Mr. Morris himself was inclined to the view that in many, if not all, cases they were combined — a view which seemed to explain the facts better than any other which had hitherto been suggested. In considering the parasitic view he referred to the researches of Unna, who had found parasites which he regarded as specific both in vesicular and in seborrhœic eczema, namely, cocci, which were often found in clusters resembling mulberries, and therefore he proposed the name morococci for these micro-organisms. They could be found in the cellular protoplasm of the elements of the vesicle. In seborrhœic eczema Unna had found morococci, "flaschen" bacilli and other bacilli of indeterminate character in the crusts and scales. Unna had cultivated the morococcus and by inoculation of the cultures had succeeded in producing acute eczema. Every practitioner was familiar with the auto-inoculability or transmissibility of the disease from one part of the patient's skin to another, and there was also clinical evidence of its contagiousness. Jameson, for instance, had pointed out that in nurses who carry children affected with eczema of the nates the disease was often inoculated in the arms, and instances of the transmission of seborrhœic eczema by contagion have also been recorded. In reference to seborrhœic eczema Leredde, though fully supporting the parasitic theory, held that Unna's description of it was too comprehensive, including as it did seborrhœa, numerous lesions of the pityriasis type, and other lesions called by Unna "yellow spots," which neither on bacteriological nor histological grounds should be classed as eczema. Stripped of these extraneous elements seborrhœic eczema was, in the opinion of Leredde, still a parasitic disease, but not a pure eczema. Leredde believed this malady to be a mixed infection due to the association of a variety of microbes, such as those of fatty seborrhœa, of pityriasis of the scalp, and of certain micro-organisms which were agents in the production of acne, together with a morococcus which was the parasite of eczema. Nevertheless, in view of the facts mentioned Mr. Morris held it proved that parasites were capable of producing eczema, even if it were not actually a parasitic disease. The fact that the most effective remedies against it were of the parasiticide class was of itself a strong argument in favour of that view, but whether the morococcus or some other parasite or combination of parasites was the sole cause of the mischief was another question. In any case the parasite must have a suitable soil to grow in; it could not strike root on a perfectly normal skin. In fact, therefore, predisposing conditions played a very important part in its production, among which might be mentioned certain hard, dry, ichthyosis-like conditions of the integument, the textural changes of old age, previous affections of the skin of long standing (notably the prurigo of Hebra), seborrhœa, and varicose veins, &c., and other causes of inflammatory conditions of the skin, such as irritation caused by certain secretions. Finally, there was undoubtedly in many cases a nervous factor in the causation, a nervous condition which seemed to lessen the resistance of the integument, instances of which were mentioned. This view was also supported by the value in treatment of nerve sedatives such as opium. The statement was generally made by writers on dermatology that eczema was hereditary. This was only true in the sense that phthisis was hereditary, and if the disease existed in one member of a family the others would be favourably placed for receiving infection. As regarded the relation of the general health to eczema the eruption was still regarded by many people as a kind of safety-valve, and patients were often warned that they must bear their skin trouble with such fortitude as they could lest a worse disease befall them in the shape of some other formidable internal disorder. Mr. Morris believed this fear to be absolutely without foundation, though he was prepared to admit that gout, diabetes, Bright's disease, and chronic dyspepsia might be aggravating circumstances, but they were nothing more. They make a case more troublesome to treat but do not cause the disease, or even modify its manifestations in any way which he could trace. In reply to the question what they were to understand by eczema, broadly his reply was as follows: it was a disease the chief clinical character of which was the infinite variety of lesion by which it displayed itself. It originated in the action of parasites on a skin the resistance of which had been enfeebled by pre-existing disease or structural abnormality or by disordered innervation, sometimes made more intractable by gout and other constitutional states, but having no direct relation to the general health.

Dr. COLCOTT FOX (London) said that since the promulgation of Unna's ideas on eczema he had determined to study again the condition known as eczema, unbiased as far as possible by the leanings of his early training. In offering a few observations on the disease in children he said he did so because in them the problem was in a measure free from some of the complications met with in later life. In infants and young children he saw two phases of eczema. The first was the state commonly known as eczema, which began most frequently in infancy on the scalp and descended thence over the face to cover in some instances the greater part of the surface. This eczema was in dry patches at first. Any vesiculation and weeping might possibly be due to the intensity of the process, but most frequently it appeared to be induced by rubbing and scratching. The second phase consisted of dry, reddish areas, with scanty adherent scales separating along the lines of flexion, but these patches might also when irritated take on a vesicular form indistinguishable from the first phase. This was also a descending inflammation, beginning on the face or scalp as a rule, which he used to call seborrhœa, but that was no doubt a bad term. This was the common affection described by Savill as epidemic amongst children. These phases ran into one another so much that he had constantly the greatest difficulty in separating them. In the next place he could find no cause whatever in the majority of children, for the patients were apparently in excellent health. He did not deny the influence of constitutional disturbance, such as rickets or gastro-intestinal trouble, in increasing the irritation and secondarily spreading and intensifying the inflammation, but the phases of eczema seemed to him to be essentially of local origin. It was possible that the future might disclose varieties caused by various parasites. In studying the disease in adults he was more and more astonished at the number of cases which conformed to the above phases. He did not deny the existence of eczema from constitutional causes, but he seldom met with cases which seemed likely to have such an origin. There was no confirmation of such a theory derivable from the study of eruptions produced by the ingestion of drugs or the circulation in the blood of various serums, or uræmia. At the same time a constitutional state predisposed to the disease, for in a laundry only one woman might have eczema set up by the soda, and this woman might herself be free for years. The soda only set up eczema under certain conditions. He therefore hardly knew on what grounds these occupation eczemas could be separated from the others. Lastly, he thought it extremely likely that the eczematous type of eruption could be produced under the influence of the nervous system. Chemically and anatomically we knew what an eczematous influence was, but no further conclusions seemed possible until further progress was made with the bacteriology of these affections.

In the discussion which followed Dr. WALLACE BEATTY (Dublin), Professor MCCALL ANDERSON (Glasgow), Dr. UNNA (Hamburg), Professor BOECK (Christiania), and others took part, and a general agreement with the views of the opener of the discussion was expressed.

FRIDAY, JULY 29TH.

Dr. P. G. UNNA (Hamburg) gave an interesting demonstration of the various Micro-organisms which he had detected in Impetigo Pustules and of the various Methods he had employed for Staining and Culture of the Organisms.

Dr. COLCOTT FOX (London) and Dr. BLAXALL (London) exhibited a collection of Endothrix Ringworm Fungi. The fundamental classification of the fungi which produce ringworm into the small-spored fungi (microsporon Audouini)

and the large-spored fungi or trichophytons is now generally admitted. The former are far more frequently met with in England than the latter and give rise to the most intractable form of ringworm of the scalp, while the latter, though of less frequent occurrence, possess many varieties. Dr. Fox and Dr. Blaxall grouped all trichophytons or large-spored fungi into (*a*) endothrix and (*b*) ectothrix, and the demonstration was given in order to explain the special characters of the former. They also brought forward a paper embodying their Further Researches on Ringworm and its Fungi, with especial reference to the invasion and method of attack of the fungi on the hair. Drawings of stained specimens were shown which demonstrated that the method of attack was essentially similar in all three forms of fungi—viz., the microsporon Audouini, the endothrix, and the ectothrix. This tended to confirm the conclusions formulated by these authors from a study of the fructifications—namely, that all these fungi belong to the same botanical family and that the numerous groups into which they are divided by some foreign authors only constitute them as sub-varieties of one great natural class.

Dr. MORGAN DOCKRELL (London) read a paper on

The Treatment of Skin Sarcoma by Coley's Fluid.

The paper was based on a series of cases, and in general terms the results obtained went to support those of other English observers that the effects of this method of treatment were not so favourable as had been claimed for it by American observers. Up to the present time it was contended removal by the knife or by cautery was the only reliable method, and valuable time might be lost by the use of other means.

Dr. ALFRED EDDOWES (London) read a paper on

The Principles involved in the Treatment of Infected Follicles.

He stated that the hair follicles of the skin might be regarded as elastic tubes guarded by funnel-shaped valves composed of prolongations of the horny layer of the cuticle into their mouths. He had obtained very satisfactory results from the application of a strong solution of phenol when the follicles were inflamed—i.e., in conditions of the follicles characterised by redness at their orifices and a slight tendency to bulge in the form of a minute vesicle, though it was useless for superficial or slack vesicles or for deep infection such as occurred in indurated acne. It was obvious that the larger the amount of fluid contained in the follicle the greater would be the interval between the living tissue and the hair forming the plug and the better would be the opportunity for diffusion to take place. Following this principle in practice Dr. Eddowes attempted in the first place to excite rapid effusion by the application of various liniments and ointments, and before the vesicles had a chance of giving way and thereby releasing the back pressure into the follicle, he applied phenol or other powerful antiseptic.

Dr. DAVID WALSH (London) read a paper on

The Excretory Irritation of the Skin and other Organs.

By "excretory irritation," he said, was meant a directly adverse action upon the epithelium of excretory organs by blood-borne irritants in the process of their excretion. In 1897 he enunciated a series of conclusions,[1] of which the principal were: 1. That some forms of dermatitis were due to the irritation set up by the excretion from the blood of certain specific substances (called by the writer "internal irritants") in the process of their elimination through the skin. 2. That the skin suffered as one of a group of excreting organs and that all these excretory outlets might be similarly affected by internal or blood-borne irritants. 3. That the internal irritants sometimes inflamed the serous and synovial membranes. 4. That proof was afforded, by means of chemical and biological tests, of the frequent passage of some of the internal irritants from the blood into the excretions and into serous and synovial effusions. 5. That any drug which inflamed the skin should be administered with great caution owing to the possibility of damage to other organs. 6. That it might be possible at times to guide the action of a remedy to the particular organ which it was wished to act upon. 7. That conversely any particular organ might be relieved of the stress of elimination. 8. That the law of excretory irritation had a wide application in general pathology. The object of the present communication was to show that recent research had afforded much additional evidence in favour of Dr. Walsh's theory. Arloing[2] had shown the toxicity of the normal sweat. Salter[3] had proved the presence of tuberculin in the sweat of phthisical patients. Hallopeau[4] regarded toxins as the immediate cause of the great majority of cutaneous eruptions—that is, apart from obvious traumatic or hereditary origins. Neumann of Vienna[5] attributed many rashes to the direct action of toxins on the skin and claimed that drug eruptions are due solely to their chemical action upon the skin. Kaposi[6] said that many toxic erythemata were due to the cutaneous excretion of toxins. Bouchard attributed certain rashes associated with dilated stomach to direct toxic elimination. Queirolo of Milan and von Eiselberg of Berlin supported the theory of toxic irritation. The elimination of the actual microbes by the skin had been asserted by Leloir, Singer, Gaertner, Brunner, Babès, and others. Dr. Walsh contended that the foregoing views afforded strong testimony in support of his theory advanced in 1890[7]—namely, that some forms of dermatitis might be due to the excretory irritation—(*a*) of micro-organisms; (*b*) of bacterial products; (*c*) of drugs; and (*d*) of the chemical virus of various specific diseases—e.g., gout.

Mr. THELWALL THOMAS (Liverpool) read a paper entitled Notes of Three Cases of Syphilis communicated by Tattooing.

[1] Walsh: Excretory Irritation, p. 42.

[2] THE LANCET, Sept. 4th, 1897.
[3] THE LANCET, Jan. 15th, 1898.
[4] Annales de Dermotologie, 1897.
[5] British Journal of Dermatology, January, 1897.
[6] Diseases of the Skin, p. 226.
[7] Medical Press and Circular, Oct. 22nd, 1890.

THE ANNUAL MUSEUM.

(Concluded from page 257.)

V.—MINERAL WATERS, BEVERAGES, ETC.

This interesting section of the museum now comprises table waters, artificial and natural mineral waters, and natural waters of the purgative saline type. One of the most prominent exhibits, and one which was very tastefully and attractively arranged, was that of the Kronthal Company (66, St. James-street, S.W.) near the exit door. There were three types of water shown, all drawn from the Kronthal valley in the Taunus. The table water distinguished by a blue label is a pure, sparkling liquid which contains a trifling proportion of alkaline carbonates and salts, both of which, however, are natural constituents of the water of the spring. We have already reported upon this water in our analytical columns. It is very palatable and brisk and has distinct acid neutralising properties. It is a valuable and natural product possessing pleasing characters which are missing in artificially prepared carbonated water. The Kronthal water distinguished by a red label is decidedly alkaline and saline, so that the statement that it is of benefit in gout and uric acid tendency is not without probability. Experiments are mentioned showing that this water dissolves six times as much uric acid as the purest distilled water. Lastly, Kronthal water distinguished by a yellow label is ferruginous and, moreover, contains the iron in a permanent form notwithstanding the ferrous condition. Most natural waters have a tendency to deposit the iron contained in them, but this water is apparently an exception to the rule, and considering the form in which the iron occurs the water should be valuable in bloodless conditions. Messrs. Ingram and Royle presented a well-arranged exhibit of waters for which they hold an agency. Amongst these was the now well-known Barium Water from the Llangammarch Wells, Wales, which has already been analysed in THE LANCET Laboratory and reported upon, but it is interesting to note that this water has been found to be very distinctly diuretic and of value in gouty tendency and in cases of an excessive quantity of uric acid in the urine. Specimens of the water were presented for inspection and trial both in the still and the aerated form. Connected with the spring at Llangammarch are a well-appointed hotel and baths with accommodation for patients, and there is a resident physician. As is now well known barium water has been employed with very encouraging results in certain cases of cardiac disease. On the same stall were the well-known waters of the State Springs, Vichy, comprising "Celestine" used in kidney disease, diabetes, and gout; "Grande-Grille," useful in hepatic diseases; and "Hôpital," a sedative in gastric disorders. The natural Carlsbad salts prepared from the

Sprudel spring formed another feature of this exhibit, while the rest of the space allotted was devoted to the now well-known natural bitter aperient water Hunyadi János. Evidence of the enterprise which has recently been shown in connexion with the development of the Royal Leamington Spa, Warwickshire, was afforded in the interesting series of specimens exhibited at the stall representing this Midland health resort. The display consisted chiefly of bottled, aerated, and concentrated waters from the natural mineral springs. In presenting some important differences in composition from many other natural aperient waters Condal Water is of interest. It contains, as we have previously shown in our analytical columns, sulphate of soda and sulphate of magnesia, the proportion of the former to the latter being as 10 is to 1. The Condal Water Company, 38, Walbrook, E.C., take every measure to guarantee that the water bottled is exactly the same as the spring yields. A great number of various artificially aerated waters was shown on the well-arranged stall of Messrs. Jewsbury and Brown (Manchester). In addition to the ordinary mineral waters there was Effervescing Kola and, as medicated waters may be mentioned Lysidine Water, Piperazine Water, Aerated Lime Water, and Carrara Water. Messrs. Alexander Riddle and Co. (36 and 38, Commercial-street, E.) found space mostly for the exhibition of Stower's Lime Juice Cordial and Lemon Squash, both of which afforded satisfactory results on analysis on the occasion of a laboratory examination which we made some time ago. In addition they offered what is described as "a perfect table water," while specimens of the Marie and Elisabeth springs of Vichy were also shown. An exhibit which attracted considerable attention was that of Aerators, Limited (Broad-street-avenue, E.C.). We have described the invention before, but so interesting and important is its application likely to become that we may append further particulars. A strong bottle is provided into the bulb-shaped neck of which is placed a "sparklet" or small steel bomb containing liquid carbonic acid gas. On screwing home the stopper the bomb is pierced and in a short time the water is thoroughly charged with the gas thus set free. This invention promises many useful applications amongst which may be mentioned the aeration of milk without dilution. A model of the methods of treatment at Harrogate was shown by the municipality of that town and the well-known natural waters of this well-known health resort were exemplified in bottled specimens of strong and mild sulphur water, chloride of iron water, and saline iron water. An interesting group of residual salts from the springs was also shown. The stall of the Apollinaris Company, Ltd. (4, Stratford-place, Oxford-street), was very large and well arranged, the space being crowded with the well-known natural waters now associated with the name of this company. Thus there were Apenta Water, a natural bitter magnesia water, Friedrichshall Water (which is also aperient, but which in addition is rich in alkaline chlorides), and Apollinaris Water and Johannis Water (the characters and properties of these table waters, as is well known, being similar to each other). Lastly, we may mention, as a convenient means of preparing an excellent, wholesome, and refreshing beverage, Specialité Lime Juice Cordial and Lemon Squash, possessing all the fresh aromatic flavour of the new and ripe fruit. An interesting addition to this exhibit was a Lemon Squash in the form of concentrated juice reduced to a crystalline residue. They are prepared by Messrs. Feltoe and Smith, 25, Augustus-street, Regent's-park, N.W.

VI.—PUBLICATIONS.

As might be expected in a city where there are several well-known publishers of medical books there was a larger display than has been usual on previous occasions of recent medical literature and publications. A complete list of books of comparatively recent issue occurred in the catalogue of the exhibition. We need only mention that the following well-known publishing firms were represented: Mr. Y. J. Pentland (Edinburgh and London); The Rebman Publishing Co., Ltd. (129, Shaftesbury-avenue, Cambridge-circus, W.C.) — this firm in addition exhibiting pure calf lymph in tubes and a system of rapid analysis by thermometer which is applicable to urea, ammonia salts and alcohol, according to the experiments of Mr. Barker Smith; Mr. B. Allsop (*Times* Office, Shipley Yorks) showed the A.B.C. system of medical book-keeping, a method now indispensable to the methodical and careful practitioner. Another system of medical book-keeping and one which presents distinct advantages was that shown by Messrs. G. C. Veale and Co. Further may be mentioned amongst booksellers Mr. W. Bryce (54, Lothian-street, Edinburgh); Messrs. Baillière, Tindall, and Cox (London); Messrs. Cassell and Co. (London); Mr. W. F. Clay (18, Teviot-place, Edinburgh); Mr. J. Craig (1, Pink-lane, Newcastle-on-Tyne), who represented Mr. H. Kimpton (82, High Holborn, W.C.); and Messrs. J. Wright and Co. (Bristol).

VII.—MISCELLANEOUS.

In this paragraph we may include those exhibits which it is difficult to classify except under the above heading. Perhaps the oddest thing in this connexion, though we are far from saying that it was not fully entitled to a place, was the improvement in domestic grates shown by Mr. David Melville (136, High-street, Edinburgh). There is certainly merit in these stoves, as while they effect an important economy in coal consumption they give a more satisfactorily distributed heat, consuming cinders, obviating dust, and promoting a uniform circulation of the air. The uses and application of the Ceres Automatic Letter and Card Files were explained to the visitors by the Ceres Depôt Co. (16, Brook-street, W.). The inventor and patentee is Mr. T. Bowater Vernon. The Edinburgh School of Shorthand and Typewriting (40, Shandwick-place, Edinburgh) took the opportunity of showing the Williams Typewriter (agency, 104, Newgate-street, London). It is described as giving visible writing, having no ribbons, being of simple construction, and a very good manifolder and very portable. Some excellent photographs were presented to view by Mr. A. Swan Watson, the official photographer to the exhibition, of New Park Studios, Bruntsfield Links. Under this heading also should be mentioned the Aseptic Glycerinated Calf Lymph of the Jenner Institute (73, Church-road, Battersea, S.W.), which is stated to be prepared in strict accordance with the methods advocated by the Local Government Board. This exhibit was instructive inasmuch as a series of plate cultures was shown illustrating the destructive influence of glycerine on adventitious microbes.

[Under the section of Foods and Food Products we omitted to mention the Invalid Specialities of Mr. Benoist (36, Piccadilly, W.), which were exhibited by Mr. H. Lawrence (47, Strand, London). The excellent Turtle Soup for invalids has, however, quite recently been the subject of favourable criticism in our analytical columns. The exhibit also included Soups and Potted Meats prepared by Mr. C. Shippan of Chichester.]

BRISTOL SEWAGE.—For several months the question of dealing with the sewage of Bristol has been under the consideration of a sub-committee appointed by the Bristol Sanitary Authority. The engineers who have been consulted recommend a scheme which provides for an outfall near Dunball Island and for the construction of storage tanks at Avonmouth so that the discharge may be effected at suitable states of the tide. A new sewer will be constructed following the course of the River Avon on the Gloucester side and a pumping-station will be erected to lift the sewage into the outfall sewer whence it will be conveyed to the Bristol Channel. The cost of the scheme will be between £300,000 and £400,000 and it is said to be sufficient for a population of 500,000. The formal report upon the matter has yet to be presented to the Sanitary Committee.

BOLINGBROKE HOSPITAL.—The annual report of Bolingbroke Hospital, Wandsworth-common, S.W., shows that during 1897 there were 300 patients treated in the hospital, comprising 49 medical cases (with 4 deaths) and 251 surgical cases (with 19 deaths); 97 surgical operations were performed. In the accident room 9138 patients were attended, of whom 179 were so seriously injured that they had to be admitted as in-patients. There were 291 cases of fracture. In the out-patient throat and ear department there were 717 attendances of patients sent with recommendations from medical men. The accounts show that the total ordinary income for the year was £3157, including £981 of in-patients' payments, while the total ordinary expenditure was £3184. The hospital premises were originally a private house which Canon Erskine Clarke, the vicar of Battersea, with the aid of subscriptions, bought and fitted up as a self-supporting hospital about 17 years ago. In 1897 it was incorporated and thus put on a permanent footing as a home hospital and a free accident hospital. The committee make an earnest appeal for financial support.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations and conformed to the by-laws and regulations, have been admitted Members of the College, viz.:—

Bailey, Reginald Threlfall.
Baker, Clement John.
Barlow, Herbert William Leyland.
Barron, Henry Thompson.
Barrow, Harold Percy Waller.
Bates, George Llewellyn.
Batteson, Carol Luther.
Beddard, William Oliver.
Bellilios, David Aaron.
Bensley, Vernon Cyril.
Briggs, George Frederick.
Brincker, John August Hermann.
Brown, Alexander.
Brown, Evelyn Kempson.
Browning, Paul Ransome.
Bruzaud, Alfred Sigismund.
Bullmore, Edward Augustus.
Bunbury, Edwin Garritt.
Burton, Percy.
Cammidge, Percy John.
Carron, Frederick Burke.
Cazaly, William Henry.
Charles, Godfrey Eustace.
Colls, Percy Cooper.
Coltart, Wilfred Henry.
Craig, James Andrew.
Cridland, Arthur Bernard.
Crompton, Sydney.
Dalebrook, John.
Dore, Samuel Ernest.
Douglas, Kenneth Harrington.
Dowding, William Frederick Charles.
Dowse, Thomas Alexander.
Dyer, Harold.
Eastman, Julis Daniel.
Ellis, Richard Thomas.
Elwes, Frederick Fenn.
Ennion, Octavius Roberts.
Fairbank, Harold Arthur Thomas.
Fegan, John Herbert Crangle.
Fenn, Charles Edward.
Fleming, John Kenneth Sprot.
Fraser, Ewan Richards.
French, Gilbert Edwin.
Fürth, Karl Joseph.
Galt, William James.
Gask, George Ernest.
Gates, Edward Alfred.
Goddard, Eugene Gilbert.
Graham, Howard William.
Groube, George Patrick Thomson.
Handson, Lionel Edward Charles.
Harmer, William Douglas.
Harvey, William John Saundry.
Hay, Kenneth Robert.
Herbert, George Heywood.
Hinde, William Cathcart.
Hislop, Walter John Henry.
Hodgson, John Edward.
Hogan, James Joseph.
Hood, Alexander Henry Morton.
Hughes, Robert.
Humphrey, Lawrence.
Hunt, Ernest Rivaz.
Jamieson, Robert.
Jenkins, Herbert Stanley.
Jones, George Horatio.
Jones, William Edmund.
Lambert, Ernest Charles.
Last, Thomas Clifford.
Leah, Thomas Noy.
Leslie, Lewis Francis.
Lewis, Frank Charles.
Lloyd, Francis Seymour.
Lucas, Stanley Arthur.
Maitland, Pelham Christopher.
Mason, John Harold.
Mason, Sidney Herbert.
Mayhew, Christopher John.
Milton, John Penn.
Milward, William Courtenay.
Myers, Bernhard Ehrenfried.
Newham, Hugh Basil Greaves.
Newman, Herbert Robert Cambridge.
Nicholson, Guy Berners.
Norris, Hugh Leigh.
O'Dowd, John Austin.
Palmer, Charles John Linton.
Palmer, George Edward.
Pares, Basil.
Pearson, Roland Wilfred.
Peatson, Joseph Clarence Stanhope.
Pegg, John Henry.
Percival, Beaumont Albany.
Phillips, James.
Plumley, Arthur George Grant.
Pope, Francis.
Price, Archibald Ainslie.
Pritchard, William Clowes.
Pywell, Percy Dodd.
Rawsthorne, Hubert.
Reid, Allen George.
Reid, Stuart Bathgate.
Reissmann, Charles Henry.
Roberts, Edward Hugh.
Roberts, George Augustus.
St. John, Winstan St. Andrew.
Saunders, Leonard Dimock.
Sawdy, Edward Charles.
Sheldon, Walter Sirr.
Shephard, Cyril.
Singer, Harold Douglas.
Smeaton, Bronte.
Smith, Sidney Maynard.
Straton, Charles Henry.
Taunton, John Godfrey Crosswell.
Tayler, George Padgett.
Thomson, Frederick George.
Tuckett, Ivor Lloyd.
Turner, Charles Ernest.
Van Rooyen, Charles Ellard.
Walker, William Walter.
Waller, Herbert Ewan.
Wedd, Gilbert.
Westcott, Edmund William Martyn.
White, Percy Stanhope.
Will, Henry Chrisholm.
Williams, Henry Thomas Hadley.
Williamson, Joshua.
Wills, Walter Kenneth.
Wroughton, Arthur Oliver Bird.
Young, Bertram Mitchell.

FOREIGN UNIVERSITY INTELLIGENCE.—*Budapest:* Dr. Hochhalt has been recognised as *privat-docent* of Internal Medicine, Dr. S. Gerlóczy as *privat-docent* of Infectious Diseases, Dr. Ludwig Nékam as *privat-docent* of Dermatology, Dr. L. Makara as *privat-docent* of Operative Medicine, and Dr. Heinrich Alapy as *privat-docent* of Diseases of the Urinary Organs.—*Cracow:* Dr. Vladimir Sieradzki has been recognised as *privat-docent* of Forensic Medicine.—*Giessen:* Dr. Hans Koeppe has been recognised as *privat-docent* of Physiology.—*Jena:* Dr. Ernst Hertel has been recognised as *privat-docent* of Ophthalmology.—*Munich:* Dr. H. Rieder has been appointed Extraordinary Professor of Hydro-therapy and Electro-therapy.—*Parma:* Dr. Gerolamo Gatti of Padua has been recognised as *privat-docent* of Surgical Pathology.—*Poitiers:* Dr. Malapert has been appointed Professor of Surgical Pathology and of Operative Medicine.—*Prague (Bohemian University):* Dr. Karl Svehla has been recognised as *privat-docent* of the Pathology and Treatment of Children's Diseases.—*Rome:* Dr. Alessandro Regnoli has been recognised as *privat-docent* of Midwifery and Gynæcology.

TEIGNMOUTH INFIRMARY.—The fifteenth annual report of the Teignmouth Infirmary has recently been published. It shows that during 1897 there were 162 in-patients admitted and 1662 out-patients treated, being an increase on the previous year. Unfortunately the receipts show a diminution of about £60.

THE LATE DR. A. P. SMITH OF BALTIMORE.—The *Maryland Medical Journal* of July 30th states that in the death of Dr. Alan P. Smith the medical profession of Baltimore has lost a surgeon who was the leading lithotomist of the country. He was born in 1840 and after receiving his academic education at Princetown he returned to Baltimore and entered on the study of medicine at the University of Maryland. In 1863 he was appointed adjunct professor of operative surgery in the University, and he occupied the chair of operative surgery from 1873 to 1877, when he retired to devote his whole time to private work. His surgical work included a series of 52 operations for lithotomy without a death.

THE FITZWYGRAM PRIZES TO VETERINARY COLLEGES.—The results of the open competition for the prizes given by General Sir Frederick Fitzwygram, Bart., M.P., for students in the four veterinary colleges of Great Britain, have just been announced. The first prize, value £50, has been gained by Mr. W. Jowett, M.R.C.V.S., a graduate from the New Veterinary College, Edinburgh, and the second prize, value £30, has been gained by Mr. T. Wolsey, M.R.C.V.S., a graduate from the Royal College of Veterinary Surgeons, London. The students of the New Veterinary College have been unusually successful in this, the most important examination open to veterinary graduates.

OPENING OF A NURSING INSTITUTE.—On August 9th the Bishop of Wakefield (Rev. Dr. Eden) opened a nursing institute at Cawthorne, a village about 4 miles from Barnsley. The building was formerly the chapel of the Wesleyan Methodists of Cawthorne and will henceforth be known as the Victoria Cottage Institute, an inscription over the doorway stating that it was appropriated to its present purpose in commemoration of the Queen's sixty years' reign. The district nurse will reside on the premises and it is intended that in winter time instruction in cookery will be given to the girls of the neighbourhood; a room has also been specially provided for the holding of mothers' meetings. The institute will be managed by a committee of ladies, presided over by Mrs. Montague Spencer Stanhope, the principal promoter of the undertaking.

RAILWAY EXTENSION TO BUDE.—The extension of the London and South-Western Railway from Holsworthy to Bude was formally opened on August 10th. The directors of the company were received at the station by Mr. John King, M.R.C.S. Eng., L.R.C.P. Edin., J.P., and the Rural District Council presented an address alluding to the beauties of the district. Bude is now easy of access from London and its advantages as a health resort ought to attract visitors.

MEDICAL MAGISTRATES.—The Lord Chancellor has added to the commission of the peace for the borough of Penzance the names of William Shepheard Bennett, M.R.C.S. Eng., and John Symonds, M.R.C.S. Eng., L.S.A. Lond.—Mr. James K. Kerr, M.D. R.U.I., of Glenaltans, Knock, Belfast, has been appointed a magistrate for the petty sessions district of Belfast.

VACCINATION AT FALMOUTH.—At the meeting of the Falmouth Board of Guardians held on August 11th it was stated that the vaccination returns for the Falmouth and Constantine districts for the first half year of 1897 showed that there were 184 births of children, of whom 154 were unaccounted for.

CARDIFF INFIRMARY.—At a meeting of the committee of the Cardiff Infirmary held on Aug. 10th it was decided that a gynæcologist to the institution should be appointed immediately.

LITERARY INTELLIGENCE.—Messrs. Macmillan and Co. have just ready for publication "A Clinical Treatise on Diseases of the Breast," by Mr. A. Marmaduke Sheild, senior assistant surgeon of St. George's Hospital.

VACCINATION AT GLOUCESTER.—At the last weekly meeting of the Gloucester Board of Guardians it was stated that during the half year ended December last there had been 820 children born, of whom 81 were successfully vaccinated, 99 died unvaccinated, and 559 were defaulters.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Close of the Session.

THE session of Parliament which opened on Tuesday, Feb. 8th, was brought to a close on Friday, August 12th. For medical men the measure of most interest dealt with during the session was the Vaccination Bill brought in by Mr. CHAPLIN and passed with the important amendment giving those who entertain conscientious objections to vaccination an opportunity of stating their objection and taking certain proceedings and thus avoiding prosecution for default. In this connexion it is of some importance to remind our readers that while the Bill was before the House of Lords the Government undertook to consider the question of revaccination during the recess with a view to future legislation. Other measures of special interest to the medical profession passed during the session were a Bill to set up a teaching university in London, a Bill to provide for the better treatment of inebriates of the criminal class, and a Bill amending in one or two particulars the Pharmacy Acts. Late in the session the Government introduced a Bill dealing with the sale of poisons, but neither it nor Mr. Chaplin's Bill to put down the adulteration of food products was carried. The prorogation was performed as is usual by a Royal Commission consisting of Members of the House of Lords.

The Plague in India.

The Queen's Speech at the close of the session contained the following paragraph—viz.: "In certain portions of Western India, and in a small district of the Punjab, the plague, though it has abated during the hot weather, still exists, and a few cases have occurred in other parts of the country. My officers have done all that lies in their power to relieve the victims of the epidemic and to arrest its growth. I am thankful that bountiful harvests have been gathered throughout the greater part of India and that the internal and external trade of the country is rapidly recovering from the depression caused by the famine of the preceding year."

HOUSE OF COMMONS.

THURSDAY, AUGUST 11TH.

Bacteriological Investigation in India.

Mr. HERBERT ROBERTS asked the Secretary of State for India whether he was aware of the proposal to found a bacteriological institute in India; whether he would state whether the Government of India had sanctioned the project and if so to what extent were they committed; whether the funds for this project were being raised by subscriptions from Indian princes and to what extent had this been done; whether he would state whether it was intended that experiments on animals should be carried on under this project; whether the institute was designed as a memorial of the Diamond Jubilee of the Queen; and whether, having regard to the divergence of views in reference to such an institution, he was in a position to recommend as a memorial of Her Majesty's Jubilee in India some work of benevolence commanding general support.—Lord GEORGE HAMILTON replied: I am aware that the Government of India have had before them proposals for the foundation of a Pasteur institute to which a bacteriological laboratory would be attached. Such institutions have to be almost entirely supported by private subscription. Independently of this project the Government of India have had under their consideration the advisability of establishing an institution for the bacteriological investigation of certain diseases specially prevalent in tropical climates. No information has reached me which justifies the assumptions and suggestions of the last three questions.

The Preparation of Tuberculin.

Mr. CHANNING asked the President of the Local Government Board whether, having regard to the recommendations of the Tuberculosis Commission and the necessity of having a pure, uniform supply of tuberculin of uniform quality for those who might wish to use it for testing their herds or dairies, he would have arrangements made at the Local Government Board Laboratory for the preparation of a limited supply of pure tuberculin.—Mr. WALTER LONG, replying for Mr. Chaplin, said that the Local Government Board could not make any such arrangements as those suggested in the question.

Venereal Disease in the Army in India.

During the debate on the Indian Budget, Mr. JAMES STUART raised this question and got a reply from the SECRETARY OF STATE FOR INDIA, who said that the hon. member must recollect that when the present Government came into office they found a most remarkable and almost incredible state of things. A certain body of ladies and gentlemen, with the desire of promoting social purity and public morality, had actually contrived in their zeal that it should be enacted in India that venereal disease should be the only disease which should be exempted from the regulations and restrictions applicable to all other contagious diseases. The condition of things seemed to him absolutely intolerable. He had always looked on this not as a military but as a national question. They had to promote the health of the people. They had a magnificent army in India—an army capable of great performances. It must not be forgotten that during the past two years our soldiers in India had distinguished themselves on the frontier and elsewhere. These soldiers were all more or less young soldiers and when the *Warren Hastings* transport was in danger many of these young soldiers stood for hours in a sinking ship and not one of them moved until every woman and child on board was removed. Therefore, he said, they were young men full of chivalrous instincts towards the weaker sex, and he did think it was an absolute disgrace that a condition of things should be allowed to exist in India whereby this superb army should become a sewer for the transmission of the worst of contagious diseases. They thought it was necessary to try to do something to mitigate the ill effects which had existed, and what they proposed was simply to put venereal disease on exactly the same footing as other contagious diseases. He expressly laid down certain conditions which should not be infringed. As a natural consequence of their determination they had to repeal the Act which prevented this disease from being put on the same footing as other contagious diseases. He had taken the utmost care to test the accuracy of the figures relating to India and he could assure the hon. Member that there was indisputable evidence to show that the removal of all regulations had largely increased the disease in India and that its intensity had also been greatly augmented. Certain reforms had been suggested and adopted relating to inspection and to measures for preventing the concealment of disease. Again, memoranda had been issued by the Commanders-in-Chief, both in India and at home, impressing upon regimental officers the necessity of giving good advice to young soldiers, pointing out the evil consequences which ensued from giving way to vicious habits and directing that in the recommendations for promotion care should be taken to see that those selected were free from vicious habits. It would be seen, therefore, that not only had he kept faith in everything he had undertaken to do, but he had gone even beyond it. He looked upon this question as one of national importance and one which must not be looked at from a purely political point of view. He believed the regulations which had been laid down could, from every aspect, be justified, that they were in accordance with the Christian precept which exhorted them to heal the sick, and that they were dictated by the common principles of humanity.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

APTHORP, HUGH L., M.B., C.M. Edin., has been appointed Assistant House Surgeon for the Devonshire Hospital and Buxton Bath Charity, Derbyshire.

BALL, C. B., M.D., M.Ch., F.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Dublin and for the Borough of Dublin.

BARRIE, W. J., M.B., C.M. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Roxburgh.

BELL, J. B., M.B., C.M. Edin., has been appointed Medical Officer of Health by the Cults Parish Council.

BOWDEN, W. J., M.B., Ch.B. Vict., has been appointed Medical Officer for the Glossop Sanitary District of the Glossop Union.

BURRIDGE, J. W., L.R.C.P., L.R.C.S. Edin., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

BURY, R. C., M.D. St. And., M.R.C.S., has been appointed Medical Officer for the Workhouse of the Wisbech Union, vice J. C. Bury.

COLEMAN, M. O., M.D. Aberd., M.R.C.S., D.P.H., has been re-appointed Medical Officer of Health by the Surbiton Urban District Council.

CROSSKEY, W. F., M.D., C.M. Glasg., has been re-appointed an Honorary Consulting Surgeon for the Lewes Victoria Hospital.

DOW, W. A., M.D. Durh., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

FALVEY, F. J., L.R.C.P., L.R.C.S. Edin., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for Kerry.

FAWSSETT, F., M.B. Lond., B.S., L.R.C.P., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

FLETCHER, L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Hoxne Sanitary District of the Hoxne Union, vice J. D. Phillips.

FRASER, H., M.B., C.M. Aberd., has been appointed Medical Officer of Health by the Harpenden Urban District Council.

HALL, F. A., L.R.C.P. Lond., M.R.C.S., has been re-appointed an Honorary Medical Officer for the Lewes Victoria Hospital.

HANLY, J. J., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Fifth Sanitary District of the Wells Union.

HARRISON, HERBERT, M.R.C.S. and L.R.C.P. Lond., has been appointed House Surgeon for the Devonshire Hospital and Buxton Bath Charity, Derbyshire.

HOOPER, C., M.R.C.S., has been re-appointed Medical Officer of Health by the Aylesbury Urban District Council.

HOWE, A. F. A., L.D.S., has been re-appointed an Honorary Dental Surgeon for the Lewes Victoria Hospital.

JONES, T. E., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer, *pro. tem.*, for the Amlwch Sanitary District of the Anglesey Union, vice G. G. Jones, resigned.

KILLICK, C. R., M.B. Lond., L.S.A., has been appointed Medical Officer of Health by the Williton Rural District Council.

KINKEAD, R., M.D., L.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County and the Borough of Galway.

LOUD, F., L.R.C.P. Lond., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

MACDERMOTT, P. A., L.R.C.P., F.R.C.S. Irel., has been appointed an Assistant Surgeon to the Dublin Metropolitan Police.

MELDON, A., M.R.C.P., F.R.C.S. Irel., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Dublin and for the Borough of Dublin.

MOIR, J. M., M.D. Aberd., has been appointed a Medical Referee under the Workmen's Compensation Act, 1897, for the County of Inverness (main land).

PEARCE, J. P., M.R.C.S., has been re-appointed an Honorary Surgeon for the Lewes Victoria Hospital.

PRATT, JOS. D., M.D., B.Ch. Dubl., F.R.C.S. Irel., has been appointed an Assistant Surgeon to the Dublin Metropolitan Police.

REVELY, JOS. S., M.D. Durh., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Tettenhall District of the Seisdon Union, vice F. J. Hawthorn.

RICHARDS, W. H., M.B., B.S., L.S.A., has been appointed Clinical Assistant to the Chelsea Hospital for Women, Fulham-road, S.W.

RUSSELL, J., M.B., C.M. Glasg., has been re-appointed Medical Officer of Health by the Brigg Urban District Council.

SMYTHE, L., M.D. Glasg., F.R.C.S. Eng., has been re-appointed an Honorary Consulting Surgeon for the Lewes Victoria Hospital.

SPICER, ARTHUR H., M.B., B.S., M.R.C.S., has been appointed Registrar to the Chelsea Hospital for Women, Fulham-road, S.W.

WILKES, R. M., L.S.A., has been appointed Medical Officer for the Second Sanitary District of the Parish of Battersea in the Wandsworth and Clapham Union.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

CARDIFF INFIRMARY. — Assistant House Surgeon for six months. Salary at the rate of £50 per a num, with board, washing, and apartments.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £100 per annum, increasing £10 yearly to £120 per annum, with board, lodging, washing, and attendance.

COUNTY ASYLUM, Gloucester.—Locum Tenens for about two months. Salary £2 2s. per week and all found (except liquors).

CUMBERLAND INFIRMARY, Carlisle.—Assistant House Surgeon for seven months from Oct. 1st to April 30th. Salary at the rate of £40 per annum, with board, lodging, and washing. Also House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing.

DEVON COUNTY ASYLUM.—Medical Superintendent. Salary commences at £300 per annum, with other emoluments. No domestic or other servants provided. Applications to the Clerk to the Visiting Committee, 9, Bedford-circus, Exeter.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon for six months. Board, residence, &c., provided, and an honorarium of £25 given conditionally.

GUEST HOSPITAL, Dudley.—Resident Medical Officer. Salary commencing at £100 per annum, increasing by £10 a year to £120 (conditionally), with board, residence, attendance, and washing.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100 per annum, with board and lodging in the hospital.

KING'S COLLEGE, London.—Assistant Physician.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the institution.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road. — House Surgeon. Salary £80 per annum, with apartments and board.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Resident Medical Officer for six months. Salary at the rate of £30 per annum, with board, attendance, and washing.

NATIONAL SANATORIUM, Bournemouth.—Resident Medical Officer for five months, commencing the first week in September. Salary £3 per month, with board and residence.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per year, with board and washing free.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—House Surgeon. Salary £120 per annum, increasing by £10 per year (conditionally), with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon. Salary £180 a year, increasing by £10 a year to £200. Subject to boarding arrangements. All other expenses—wages, coal, gas, furnished apartments, &c.—are found by the Institution. Also Clinical Assistant for six months. Salary £80 for that period.

OWENS COLLEGE, Manchester.—A Senior and Junior Demonstrator in Physiology. Stipends £150, rising to £200, and £100, rising to £150, respectively.

PARISH COUNCIL OF EVIE AND RENDALL.—Medical Officer. Salary £45 a year and a free house. Apply to the Inspector of Poor, Evie.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £30 per annum, board and washing provided.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow.—House Surgeon, also Assistant, at the Dispensary, for one year. Salary of the House Surgeon £50, with board, &c., and of the Assistant (non-resident) £80.

ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £80 a year, with residence, board, attendance, and washing.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, Plymouth.—Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10 given.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton. — Assistant House Surgeon, for six months. Board, washing, and lodging in the hospital provided.

UNIVERSITY COLLEGE OF SOUTH WALES AND MONMOUTHSHIRE.—Assistant Lecturer and Demonstrator in Physiology for one year. Salary £120. Applications to the Secretary and Registrar, University College, Cardiff.

WESTERN GENERAL DISPENSARY, Stafford-street, Marylebone-road, London.—House Surgeon, unmarried. Salary £80, with board and residence.

WEST RIDING ASYLUM, Menston, near Leeds.—Fourth Assistant Medical Officer. A qualified lady. Salary to commence at £100, rising £10 annually to £150, with board and apartments. Also a lady to act as Resident Clinical Clerk. Board and residence provided.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon for six months. Board, lodging, and washing provided, and an honorarium at the rate of £50 per annum will be given.

Births, Marriages, and Deaths.

BIRTHS.

BOWDEN.—On August 8th, at University-square, Belfast, the wife of W. J. Bowden, D.D.S., L.D.S., of a son.

DALBY.—On August 16th, at Springfield-road, Kingston-on-Thames, the wife of Arthur M. Dalby, M.D., of a son,

ELLIS.—On August 13th, at Cedar Lodge, Lambridge, Bath, the wife of W. McDonogh Ellis, M.D., M.R.C.S., of a daughter.

GOODCHILD.—On August 8th, at Highgate, N.W., the wife of N. John Goodchild, M.R.C.S., L.R.C.P., of a son.

RABY.—On August 8th, at Craven House, Devizes, the wife of Leonard Raby, M.D., of a daughter.

WINGFIELD.—On August 12th, at Aubyn House, Moseley, Birmingham, the wife of J. Wingfield, L.R.C.P. and L.R.C.S. Edin., of a son.

MARRIAGES.

BUXTON—HAYWARD.—On August 17th, at St. Peter's, Dulwich-common, Alfred St. Clair Buxton, F.R.C.S.E., to Henrietta Blanche, elder daughter of Edward King Hayward, of Marmora-road, Honor Oak.

EDELSTEN—MUSKETT.—On August 10th, at the parish church, Corfe Mullen, Dorset, by the Rev. Eliott-Drake Briscoe, M.A., assisted by the Rev. R. Plumptre, M.A., rector of the parish, and the Rev. F. L. Schreiber, M.A., Ernest A. Edelsten, M.B., M.A. Oxon., M.R.C.S., L.R.C.P., of Brixton, S.W., eldest son of J. Malin Edelsten, Esq., of Grappenhall, Cheshire, to Catherine Helen, daughter of the late John Muskett, Esq., of Diss, Norfolk, and of Mrs. Moon, of Corfe Lodge, Wimborne, and granddaughter of the late John Gould, Esq., F.R.S.

DEATHS.

BAWTREE.—On August 13th, at Mistley Hall, Essex, Edward William Bawtree, M.D., Deputy-Inspector-General of Hospitals, aged 80 years.

HAWKEN.—On August 12th, at Coombe St. Nicholas, near Chard, Charles St. Aubyn Hawken, M.R.C.S., formerly of Wandsworth, Surrey.

LEWIS.—On August 13th, at Markham Lodge, Liverpool-road, Kingston-on-Thames, Deputy Surgeon-General John Riggs Miller Lewis, aged 77.

ROPER.—On August 14th, at Southwold, Suffolk, George Roper, M.D., formerly of Ovington-gardens, S.W., aged 75.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND, WHEN ACCOMPANIED BY BLOCKS, IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1898, which was completed with the issue of June 25th, and the Title-page to the Volume were given in THE LANCET of July 2nd.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1898, bound in cloth, gilt lettered, price 18*s.*, carriage extra; and Cases for binding the half-year's numbers, cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*, can be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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Subscriptions which may commence at any time) are payable in advance.

"TUMOURS CAUSED BY PATHOGENIC YEASTS."

AT a meeting of the Society for the Cultivation of Medical and Natural Science in Cagliari, reported in the *Supplemento al Policlinico* of July 16th, Professor Sanfelice said that in his experience when dogs were inoculated with material obtained from malignant tumours occurring either in man or in the lower animals there was either no pathogenic action at all or else only inflammatory processes which had nothing in common with the tumours from which the inoculations were made. This could be easily explained on the ground of the alterations which the blastomycetes undergo in the production of chronic lesions such as tumours. He therefore abandoned the experimental inoculations with the products of morbid growths and applied himself to the study of saccharomyces neoformans, a blastomyces obtained from the atmosphere, using it for the inoculation of dogs and cats, as these animals are liable to become spontaneously affected with malignant tumours. After inoculations of pure cultures of saccharomyces neoformans, if the duration of the infection was long the "parasites" always assumed the typical forms described by Russell as fuchsin corpuscles and by other observers as coccidia, and nothing was found to support the views of those who maintain that Russell's corpuscles are due to a degeneration of the cellular elements. Among a great number of inoculations made specially on dogs two have recently yielded positive results and have convinced him that the saccharomyces neoformans is capable of producing in dogs tumours which both in their growth and structure are identical with adenocarcinoma in man. This view is in direct opposition to that expressed by Dr. Busse, quoted in THE LANCET of August 6th.

HOSPITALS IN ANCIENT TIMES.

THE *Scientific American* is responsible for the following:—

"A very interesting and pleasing discovery is announced from Baden, near Zürich. The learned have been discussing for ages whether anything in the way of hospitals was known to the ancients—it is not to be said that they have been disputing, for there was not material enough hitherto to support a lively argument. One might read the whole volume of Greek and Roman literature—carefully, too—without noticing one passage that might be interpreted as an allusion to a hospital. The works of Hippocrates could not fail to speak of them surely, if any existed; but nothing is there beyond a reference to the notes of 'cases' observed in the Temple of Æsculapius. So it is generally assumed that there were no hospitals in those days; the Aesclepia were 'baths' with massage treatment. Scholars who hold to the other opinion can adduce only hints in its favour. But now we hear that one has actually been discovered at Baden, containing 'fourteen rooms, supplied with many kinds of medical, pharmaceutical, and surgical apparatus, probes, tubes, pincers, cauterising instruments, and even a collection of safety pins for bandaging wounds'—but these things are familiar. 'There are also medicine spoons in bone and silver, measuring vessels, jars, and pots for ointment, some still containing traces of the ointment used.' The latest date of the coins found appears to be in the reign of Hadrian. Probably it was a military hospital, for this was the station of the Seventh and Eighth Legions. But the find is certainly not less interesting on that account, for the army medical service of Rome and Greece is one of the deepest mysteries of archæology. Cæsar refers only once to his regimental surgeons—is there a single distinct allusion elsewhere? We hail with puzzled gratitude the casual remark of Xenophon that the Spartans sent their doctors to the rear when a fight impended, but we look vainly for more information from him or anybody else."

THE CASE OF DR. REICHARDT.

DR. SAVAGE sends us the following list of subscriptions which have been received towards a fund for Dr. Reichardt's defence:—

	£	s.	d.		£	s.	d.
G. H. Savage	10	0	0	J. D. Rawlings...	1	1	0
E. C. Kingsford	5	5	0	G. H. Lang	1	1	0
John E. Ogle	1	1	0	E. B.	2	2	0
C. B. Lockwood	1	1	0	A. H. Tubby	2	2	0

WANTED A TRACT ON SIGHT-TESTING.

To the Editors of THE LANCET.

SIRS,—Can any of your readers tell me of a brief tract on the subject of spectacles which can aid me? For four years past I have used a double eye-glass (numbered 16) which suddenly appears unsuitable. Opticians have supplied me with others (No. 15, &c.), which, however, hardly appear to suit as well as my old one. I am aware I have been reading rather too much, but I feel convinced that I have not got the proper lens. It is difficult for me to visit an oculist. There ought to be some pamphlet, not of a mere catchpenny order, instructing a physician how to gauge his own sight or that of others, and if you personally know of such of real value I should be very much obliged for the information.

I am, Sirs, yours faithfully,

August 15th, 1898. FUNDUS OCULI.

THE GENERAL PRACTITIONER AND HIS FEVER PATIENTS.

To the Editors of THE LANCET.

SIRS,—As a general practitioner I am anxious to lay the following case before you. I was treating a patient who happened to be a great supporter and friend of mine, and finding he suffered from typhoid fever I reported the case to the medical officer of health, whereupon he had him removed to the sanatorium. A few days after I naturally thought of calling to see my former patient and friend, so I wrote letting the medical officer of health know that I was anxious to call and hoping he had no objection. To my surprise he wrote telling me he could not permit me to visit the sanatorium unless my patient got worse, when

he would call me in consultation. In reply I expressed my surprise and explained that I intended calling, not in any professional capacity, but as a friend. To this, however, I got no reply, but the patient died, and I was not even called in consultation. Do you not think that the medical officer of health might have allowed me to visit the patient a few times as a friend, or if he so objected, might he not have offered me to accompany him on one or two of his morning visits, knowing that I was most anxious to see him, or, finally, as he suggested himself but did not carry out, should he not have asked me in consultation? I must apologise for taking up so much of your space, but I am anxious to give you full particulars as the above case and similar ones place me in a very awkward position, since when my patients are removed to the sanatorium many of them expect that I should call to see them a few times during their sojourn there.

I am, Sirs, yours faithfully,

August 15th, 1898. GENERAL PRACTITIONER.

**** The Local Government Board has always urged that the medical officer of health should be careful to regulate his conduct towards the general practitioner by the customs which usually govern the relations of medical practitioners towards each other. [See "Difficulties under the Infectious Disease (Notification) Act," a small pamphlet published at this office.] But a medical officer of health often finds it difficult to discharge his duties towards the public and comply at the same time with a rigid interpretation of the demands of medical etiquette. It seems to us unfortunate from the above account that our correspondent was not allowed to see his former patient, but we cannot express a definite opinion upon a one-sided statement.—ED. L.

THE NOMENCLATURE OF SKIN DISEASES.

To the Editors of THE LANCET.

SIRS,—In your account of the Dermatological Section at the Edinburgh meeting of the British Medical Association in THE LANCET of August 13th, p. 456, column 1, the following statement occurs: "Formerly everything bullous was called pemphigus, but owing to the researches of Unna, Duhring, and others, a new group named dermatitis herpetiformis has been sorted out from the pemphigus class ....." As a matter of fact, it was the late Tilbury Fox who first drew attention to hydros herpetiforme, or dermatitis herpetiformis as it is more usually called, in 1880 (*vide* Diseases of the Skin by H. Radcliffe Crocker, second edition, p. 204). This point was well brought out at the discussion on Dermatitis Herpetiformis by the Dermatological Society of London (*British Journal of Dermatology*, March and April, 1898). I am, Sirs, yours faithfully,

GEORGE PERNET.

Upper Gloucester-place, N.W., August 15th, 1898.

Mr. E. S. Goodby.—1. It is difficult to say when a cottage hospital becomes a general hospital. To put it shortly, we should say that a cottage hospital was (*a*) small—e.g., 20 beds; (*b*) strictly local; (*c*) that it had no staff of its own, but that each medical man who sent a patient to it had the right to attend such patient.—2. "Neale's Digest" may be consulted for full references. We may mention an article in the *Practitioner*, vol. ii., 1893, and another in THE LANCET, Oct. 13th, 1894, p. 847.

Chirurgus.—If there is any legal bond our correspondent is, of course, legally bound to abide by that bond. If there is no bond there are still considerations of honour to be looked to, but we should say that in a town of such a population as our correspondent mentions if he took care to avoid taking over any patients whom he knew had previously belonged to the practitioner whose work he had done there would be no harm in the course which he proposes to adopt.

E. P. N.—The General Medical Council issued separate summonses against the practitioner in question, one for calling himself a "physician" and another for calling himself a "surgeon," but the latter summons was not proceeded with. A holder of the diploma in question is entitled to compete for appointments in the navy, the army, or under the Poor-law.

Mr. James Downing.—THE LANCET has never recommended either the Mattei or Viavi treatments. With regard to them, however, we may refer our correspondent to our issues of Jan. 19th, 1895, p. 174, and Jan. 31st, 1896, p. 181.

F.R.C.S. Eng.—We do not consider the communication quite suitable to our columns and we cannot take the responsibility of advising that it should be sent to the eminent nobleman upon whose words it is founded.

Mr. G. Dundas Edwards.—No one can practise on French soil unless he possesses the degree of M.D. of a French faculty. All information as to the question will be found in THE LANCET, Sept. 12th, 1896, p. 769.

H. de B. D.—The circulation of such a card is contrary to professional etiquette, and the circumstances are made worse by the fact of the card being left at the house of the patient of another practitioner.

J. W. H.—The high centre of the county, the rigorous east and north coast and the marshy south and west borders differ entirely in their suitabilities for such patients.

Ablution.—There are several, and their tariffs vary considerably and not always directly as the comforts afforded. A list will be found in the Post-office Directory of London.

C. A. E.—We have no further information. The medical view is definite enough and our correspondent has expressed it correctly.

H. F. W. (Aldershot).—It would be an undoubted transgression of medical etiquette.

Religieuse should consult her medical adviser.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat Hospital (2 P.M.).

TUESDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

WEDNESDAY (24th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

THURSDAY (25th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex, (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat Hospital (2 P.M.).

FRIDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat Hospital (2 P.M. and 6 P.M.).

SATURDAY (27th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.), London Throat Hospital (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, August 18th, 1898.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 12	30·05	S.W.	...	123	87	61	65	73	Bright
,, 13	29·95	W.	...	125	88	61	64	70	Bright
,, 14	30·01	S.W.	...	128	89	65	67	72	Bright
,, 15	29·98	E.	0·04	121	83	67	67	72	Hazy
,, 16	29·91	S.E.	...	113	83	63	64	67	Cloudy
,, 17	30·09	N.E.	...	109	79	62	60	63	Overcast
,, 18	30·12	S.E.	...	114	77	59	62	66	Bright

During the week marked copies of the following newspapers have been received: *Buxton Advertiser, Hereford Times, Warwick Advertiser, Eastern Morning News, Huddersfield Examiner, Walsall Advertiser, Liverpool Daily Post, Times of India, Pioneer Mail, Manchester Guardian, Scotsman, Citizen, Dundee Courier, Architect, Sheffield Telegraph, Builder, Norwich Mercury, Brighton Gazette, Cambridge Independent, Bristol Mercury, Glasgow Herald, Banbury Guardian, Newcastle Journal, Sussex Daily News, Leicester Post, Yorkshire Post, Beverley Guardian, Morpeth Herald, East Sussex News Midland Mail, Malton Gazette, Leeds Mercury, Birmingham Gazette, East Essex Times, Lynn News, South Wales Daily News, Sanitary Record, Belfast News-Letter, Hertfordshire Mercury, City Press, Local Government Chronicle, Reading Mercury, Mining Journal, Public Health, Engineer, Manx Sun, Chelsea Mail, Surrey Advertiser, Local Government Journal, Poole Herald, Dunstable Borough Gazette, West Briton Advertiser, Tunbridge Wells Courier, Newark Advertiser, Bucks Advertiser, Observer and Chronicle (Bournemouth), Hawick Advertiser, Todmorden News, Daily Express (Dublin), Devon Evening Express, Buxton Chronicle, Leighton Buzzard Observer, Oban Times, Woolwich Gazette, &c., &c.*

Communications, Letters, &c., have been received from—

A.—Dr. Grant Arnott, Newcastle-on-Tyne; Australian Wine Importers, London; Messrs. Allen and Hanburys, Lond.; A. J. M.; A. H.; A. E. B.

B.—Mr. Heather Bigg, Lond.; Dr. J. B. Busdraghi, Madrid, Spain; Mr. L. Browne, Lond.; Mrs. E. A. Blackmore, Lond.; Dr. D. Bower, Bedford; Messrs. Bates, Hendy, and Co., Lond.; Mr. J. W. Bird, H.M.S. *Alexandra*, Portland; Mr. M. G. Bateman, Folkestone; Mr. J. R. de C. Boscawen, Truro; Dr. F. Biaxall, Lond.; Mr. R. Baker, Lond.; Dr. B.; Mr. S. Baxter, Lond.; Mr. C. Birchall, Liverpool; Mr. J. Briggs, Lond.; Dr. W. H. Bunting, Edinburgh; Mr. W. H. Browne, Ilfracombe.

C.—Mr. S. Cowes, Sandgate; Cortland Wagon Co., Lond.; *Correspondens-Blatt für Schweitzer Aerzte*, Basel; Mr. L. P. Casella, Lond.; Ceres Automatic File Co., Lond.

D.—Mr. J. A. W. Dollar, Lond.; Messrs. Down Bros., Lond.; Mr. J. Downing, Lond.

E.—Mr. G. D. Edwards, Woking; Messrs. Eason and Son, Dublin; Mr. Ern, Ohligs, Germany; R. G. W.; E. M. C.; Dr. E. A. Edelsten, Edinburgh.

F.—Messrs. Ferris and Co., Bristol; Messrs. Fannin and Co., Dublin; F. W. T.; Dr. C. FitzGerald, Folkestone; Mr. A. Fisher, Bristol.

G.—Gloucester County Asylum, Superintendent of; Herr L. W. Gans, Frankfurt; Dr. W. Griffith, Lond.; Mr. E. Gooddy, Llandudno; Messrs. Gordon, Alexander, and Co., Lond.

H.—Mr. A. Helbig, Lond.; Dr. V. Harley, Lond.; Messrs. C. J. Hewlett and Son, Lond.; Mr. J. W. Hill, Reigate; Hartley College, Southampton, Clerk of; Mr. J. Heywood, Manchester.

I.—*Indian Medical Record*, Calcutta, Editor of.

J.—Mr. Henry James, Brighton; Messrs. Jones Bros., Clifton; Dr. H. J. Jones, Horsham; Jenner Society, Lond., Secretary of; Messrs. W. and A. K. Johnston, Edinburgh.

K.—Kent County Ophthalmic Hospital, Maidstone, Secretary of; Mr. R. C. B. Kerin, Lond.

L.—Mr. C. E. Livesay, Baling.

M.—Dr. T. H. Morton, Sheffield; Medical Society of Victoria, Melbourne, Hon. Secretary of; Mr. F. Reid Mackay, Rothesay; M. B. G.; Dr. W. Milligan, Manchester; Messrs. Macmillan and Co., Lond.; Medicus, Hull.

O.—Mr. S. Oliver, Lond.

P.—Dr. D. T. Playfair, Bromley; Messrs. Potter and Sacker, Lond.; Post Office, Lond., Secretary of; Dr. F. H. Preston, Para; Messrs. Parke, Davis, and Co., Lond.; Mr. H. J. Palmer, Gamlingay.

Q.—Queen Margaret College, Glasgow, Hon. Secretary of; Queen's Hotel, Manchester.

R.—Mr. J. Richardson, Lond.; Mr. R. Redpath, Newcastle-on-Tyne; R. S. C.; Dr. J. B. Ryley, Lond.; Mr. W. B. Rotheroe, Lond.; Mr. R. Robinson, Shrewsbury; Royal Eye Hospital, Lond., Secretary of; R. C. W.; Messrs. Robertson and Scott, Edinburgh; Rotherham Hospital and Dispensary, Secretary of.

S.—Mr. P. Swain, Plymouth; Scientific Press, Lond.; Mr. Noble Smith, Lond.; Messrs. J. P. Segg and Co., Lond.; St. Mungo's College, Glasgow, Secretary of; Messrs. J. T. Segrue, Lond.; Messrs. Street and Co., Lond.; Messrs. Street, Bros., Lond.; South Devon and East Cornwall Hospital, Plymouth, Hon. Secretary of; Dr. Savage, Lond.; Mr. H. Shmith, Lond.

T.—Tower Hamlets Dispensary, Secretary of; Dr. J. Thomson, Presteign; Taunton and Somerset Hospital, Hon. Secretary of; Mr. J. Thin, Edinburgh.

U.—University College, Bristol, Dean of; University, College, Sheffield, Dean of.

W.—Mr. R. Walker, Aberdeen; Messrs. Widenmann, Broicher, and Co., Lond.; Messrs. Wills, Lond.; Dr. J. Wallace, Greenock; Mr. E. S. Weymouth, Lond.; West Riding Asylum, Menston, Clerk of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. Altschul, Lond.; A. F. M.; A. B.; A. M.; A. R. G.; A. G.

B.—Mr. C. L. Bedford, Birmingham; Bootle Borough Hospital, Clerk of; Bristol Corporation, Health Department, Secretary of; Mr. W. G. Burcombe, Lincoln; Mr. A. O. Bobardt, H.M.S. *Dart*; *Bath Chronicle*, Publisher of; Dr. R. W. Baxter, Bromley; Messrs. Burgoyne, Burbidges, and Co., Lond.

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E.—Dr. J. Edmondson, Burscough; Dr. Elgood, Windsor; Messrs. Evans, Sons, and Co., Liverpool; Dr. W. Evans, Shepley; Esmond Cycle Saddle Co., Lond.; Dr. F. W. Eurich, Bradford.

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O.—Mr. W. K. Orrell, Runcorn; Dr. C. O'Sullivan, Lond.; Old Kent-road (624).

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S.—Dr. J. F. Sheppard, Sandy; Messrs. Stevens, Miller, and Jones, Norwich; Surgical Supply Association, Manchester; Messrs. A. F. Sharp and Co., Glasgow; S. G. W.; Surgeon, Brentford; Messrs. Salamon and Co., Rainham; Mr. R. J. Sheperd, Llandudno; Strophanthus, Lond.

T.—Mr. L. G. Thomson, Kendal; Miss Tayler, Tunbridge Wells; T. F. H.

V.—Messrs. J. and J. Vice, Nottingham; Surgeon A. H. H. Vizard, Jamaica.

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